

# SHARP SERVICE MANUAL

CODE : 00ZPCAX40SM-E

## PERSONAL COMPUTER

### MODEL PC-AX40

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Parts marked with "△" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

### Caution about Battery

**Caution** : Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

**Attention** : Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

# CHAPTER 1. OUTLINE

## 1. GENERAL DESCRIPTION

This Service Manual covers the changes made to the base models.

Read the following Service Manuals in conjunction with this Manual.

- PC-AX10 SERVICE MANUAL (CODE:00ZPCAX10SM-E)
- PC-AX20 SERVICE MANUAL (CODE:00ZPCAX20SM-E)
- PC-AX40 PARTS GUIDE (CODE:00ZPCAX40PG-E)

## MAJOR MODIFICATIONS

Classification	Item	(Current model: PC-AX20)	PC-AX40	Remarks
Destination	Suffix	A, E, G, H, I	A, E, G, I, K	
Circuit	CPU	Mobile Pentium III Processor SpeedStep BGA2 600 MHz	Mobile Pentium III Processor SpeedStep BGA2 700 MHz	
	LAN controller	REALTEK: RTL8139BL	REALTEK:RTL8139CL	
	USB Hub controller	TI: TUSB2043	TI:TUSB2036	
	3.3 V/5V DC/DC	TOYOTA:SB3053P	MAXIM:MAX1632	
	1.5 V DC/DC	TOYOTA: SB3032P	MAXIM:MAX1711	
	IEEE1394 controller	–	μPD72872	
	Battery cell (number of cells)	Matsushita 1400 mAh square cell x 4	Matsushita 1800 mAh cylindrical cell x 8	
	Sheet battery related-circuit	Yes	Abolished	
Mechanism	FAN	Axial flow FAN	Centrifugal FAN	
	Keyboard	Light purple	White, Korean version added	
	Touchpad	Light purple	Gray	
	Touchpad button	Light purple	Silver-painted	
	QSB button	Light purple	Silver-painted	
	VGA cap	Gray	Shape changed (slide type), silver-painted	
	Standard battery cabinet	4 square batteries	8 cylindrical batteries	
	Bottom CAB sheet battery door	Sliding	Fixed cover (Support sheet battery is abolished)	
	Mail receive button	Only for destination A	For all destinations	
	HDD	12 GB (MK1214GAP)	20 GB (MHM2200AT)	
Packaging and labels	Modem FCC label	No	Added to products destined for A/U	
	COA label	Win Me destined for G only	Win Me for all destinations	

## CHAPTER 2. SPECIFICATIONS

### 1. SPECIFICATIONS

Parts		Specifications	
CPU		Mobile Pentium III 700MHz featuring Intel SpeedStep Technology	
Secondary cache		256KB (Integrated with CPU)	
ROM		Including system BIOS and VGA BIOS	
RAM	System	SDRAM 64MB (expandable to 192MB)	
	Video	4MB	
Display	Panel	Active Matrix (TFT) color LCD	
	Video controller	ATI Mobility-M	
Keyboard		IBM compatible keyboard	
Pointing device		Glide pad (touch-sensitive control pad with 2 buttons )	
Drive	Hard disk	IDE interface	
	Floppy disk (external)	3.5", 1.44MB/720KB	
	CD-ROM (external)	24x speed (option)	
PC card slot		Type II x 1 (PCMCIA 2.1 compliant) CardBus compliant	
Audio system		Monaural microphone, monaural speaker, sound system compliant with AC97 audio	
I/O ports	Audio	Audio output jack ( stereo, S/PDIF compliant), external microphone jack	
	Video	External monitor port	
	Others	Two USB ports, two mini USB ports (for floppy disk drive unit), IEEE 1394 port	
Infrared		IR port (IrDA:115Kbps/4Mbps, SHARP ASK:9600bps)	
Modem		Data: 56Kbps (receive), 33.6Kbps (send), Fax: 14.4Kbps	
LAN		100Mbps operation	
Power	AC adapter	100-240V, 50-60 Hz	
	Battery	Rechargeable lithium ion battery	
	Battery life	Approximately 3 hours (standard battery only) Approximately 3.5 hours (high capacity battery pack (CE-BL10) only) *battery life varies depending on usage	
	Battery charging time *Charging time varies depending on usage	Standard battery	Turned off/hibernation: about 3 hours Turned on: about 7.5 hours
		High capacity battery pack	Turned off/hibernation: about 3.5 hours Turned on: about 8.5 hours
Dimensions	Computer	10.55" wide x 9.44" deep x 0.96" (min.)/1.48" (max.) high (268mm x 242mm x 24.4mm (min.)/38mm (max.))	
	Floppy disk drive unit	4.37" wide x 5.31" deep x 0.81" high (111mm x 135mm x 20.5mm)	
Weights	Computer	About 3.97 lb (1.8 kg)	
	Floppy Disk Drive Unit	About 0.57 lb (260 g)	
Operating	Temperature	50°F to 95°F (10 °C to 35 °C)	
environment	Humidity	20% to 80% (non-condensation)	

#### Options

High Capacity Battery Pack	CE-BL10
External CD-ROM Drive	CE-CD03
AC Adapter	CE-J03V (may not be available in some countries)

## 2. DIFFERENCES BY DESTINATION

Model Name	PC-AX40	←	←	←	←
Model Name (Sharp internal name)	A3PCAX40E	A3PCAX40A	A3PCAX40G	A3PCAX40I	A3PCAX40K
Version code	E	A	G	I	K
Destination countries	SRSSC (Malasia) SEA (Austria)	SRH (Hong Kong), SCA (Australia), SBI (India)	SEEG (Germany)	SEIS (Italy)	SEI (Korea)

### Main Specifications

CPU	Pentium III 700MHz	←	←	←	←
L2 Cache	256KB On Die	←	←	←	←
Memory	64MB SDRAM(Max.192MB)	←	←	←	←
LCD	12.1" XGA TFT	←	←	←	←
HDD	20GB	←	←	←	←
FDD	External (USB I/F)	←	←	←	←
CD-ROM drive	Optional	←	←	←	←
Modem	N/A	←	←	←	←
LAN	100Base-TX/10Base-T	←	←	←	←
IEEE1394	Yes	←	←	←	←
PC card slot	Type II x 1 (CardBus)	←	←	←	←
Keyboard	US English	←	German	Italian	Korean
Pointing devise	Glide pad	←	←	←	←
Mail Check button	Yes	←	←	←	←
IR	ASK + IrDA (4Mbps)	←	←	←	←
OS	Windows Me (English)	←	Windows Me (German)	Windows Me (Italian)	Windows Me (Korean)

### Badge/Label

Badge on the LCD cabinet	"SHARP" logo	←	←	←	←
Seal on the FDD	"SHARP" logo	←	←	←	←
Microsoft COA label	Yes	←	←	←	←
Intel Inside label	Pentium III	←	←	←	←

### OS/Software

HDI version	U/A/H/E	U/A/H/E	G	I	K
Windows Me	English	←	German	Italian	Korean
IE5.5	English	←	German	Italian	Korean
Adobe Acrobat Reader	English	←	German	Italian	None
FaxTalk	English	←	German	Italian	None
Photo Suite III	English	←	German	Italian	English
StudioDV	None	←	←	←	←
SpeedStep utility	English	←	German	Italian	Korean
QSB utility	English	←	German	Italian	English
Automatic E-mail Receiver	English	←	←	←	←
RealPlayer/Jukebox	None	←	←	←	←
Voquette	English	←	←	←	None
VirtualCD	None	←	←	←	←
McAfee VirusScan	English	←	←	←	None
Default Wallpaper	SHARP ver.	←	←	←	←

**Accessories**

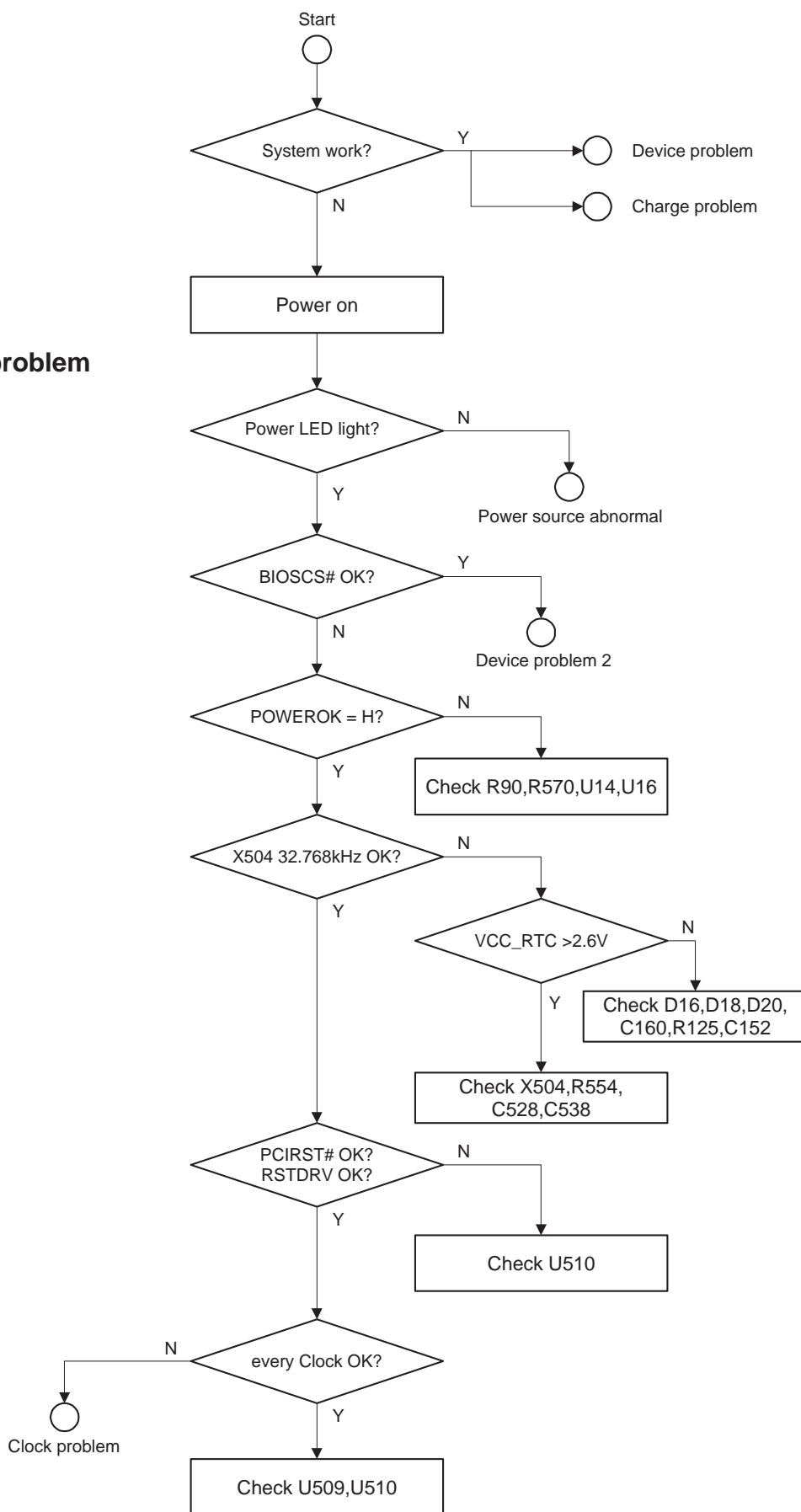
AC cable	None	US	UK	←	Germany	←	None
AC adapter	Yes	←	←	←	←	←	←
Modem cable	None	Yes (US)	Yes (A-tick)	Yes (UK)	Yes (F connector cable)	Yes (Same as US cable)	←
LAN cable with core	Yes	None	←	Yes	←	←	None
Core for LAN	None	Yes	←	None	←	←	Yes
FDD	Yes	←	←	←	←	←	←
FDD Cable	Yes	←	←	←	←	←	←
WinMe First Step Guide	English	←	←	←	German	Italian	Korean
Recovery CD	U/A/H/E ver.	←	←	←	G ver.	I ver.	K ver.
BootFD	Yes	←	←	←	←	←	←
Warranty	None	US warranty set	None	UK warranty	None	←	←
Operation manual	English	←	←	←	German	None	←
Re-install manual	English	←	←	←	German	None	←
Unpacking list	English	←	←	←	German	None	←
Welcome sheet	None	←	←	←	←	←	←

**Regulations**

EMI	CE	FCC15	A-tick	CE	←	←	Korean EMC
Safety	CB, PSB, TUV	UL 3rd	CB, NSW	TUV	←	←	
PTT		FCC68	ACA	CTR21	←	←	Korean PTT

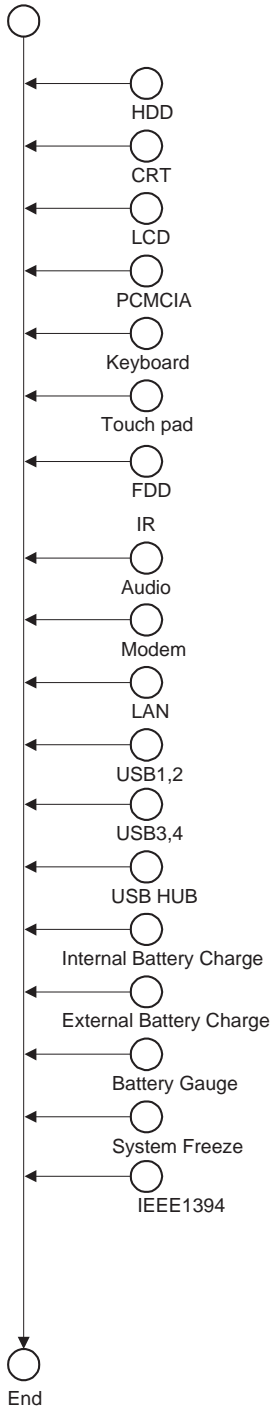
## CHAPTER 3. TROUBLE SHOOTING 1. Trouble shooting

1. Trouble shooting
2. Device problem
3. Power source abnormal
4. Power on problem
5. Power line problem
6. 3.3V/5V problem
7. VTT problem
8. VCC\_CORE problem
9. Battery charge problem
10. Sheet Battery charge problem
11. Clock problem
12. MEMORY problem
13. BIOS problem
14. HDD problem
15. LCD problem
16. CRT problem
17. Keyboard problem
18. Touch pad problem
19. Audio problem
20. Modem problem
21. PCMCIA problem
22. IR problem
23. LAN problem
24. USB1 problem
25. USB2 problem
26. USB HUB problem
27. IEEE1394 problem
28. CDROM problem
29. FDD problem
30. PDC Adapter problem

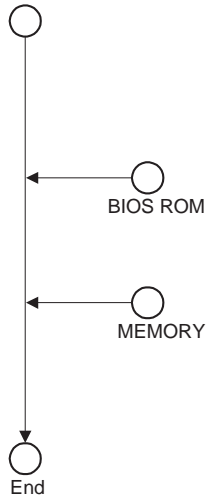


## 2. Device problem

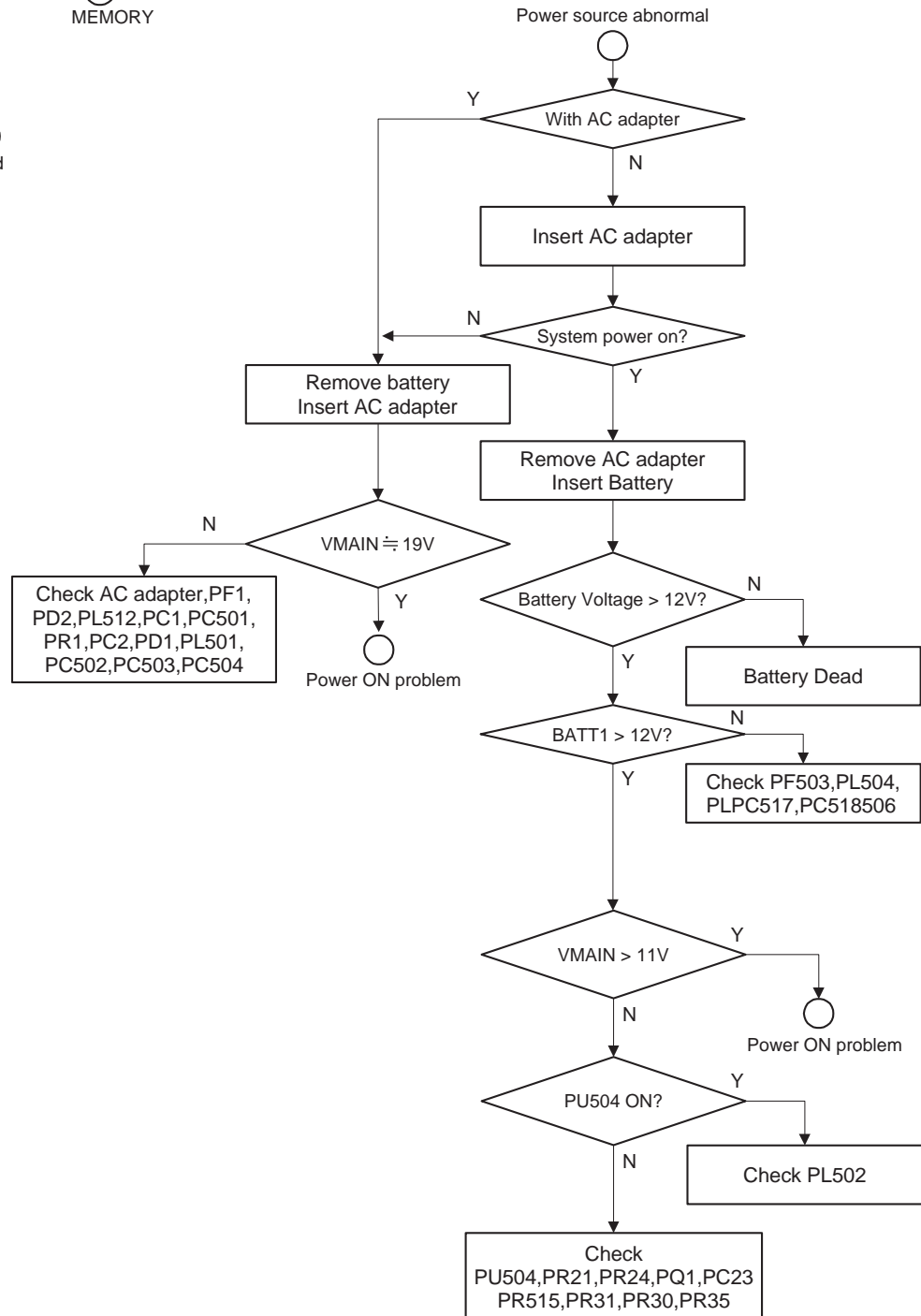
Device problem 1



Device problem 2



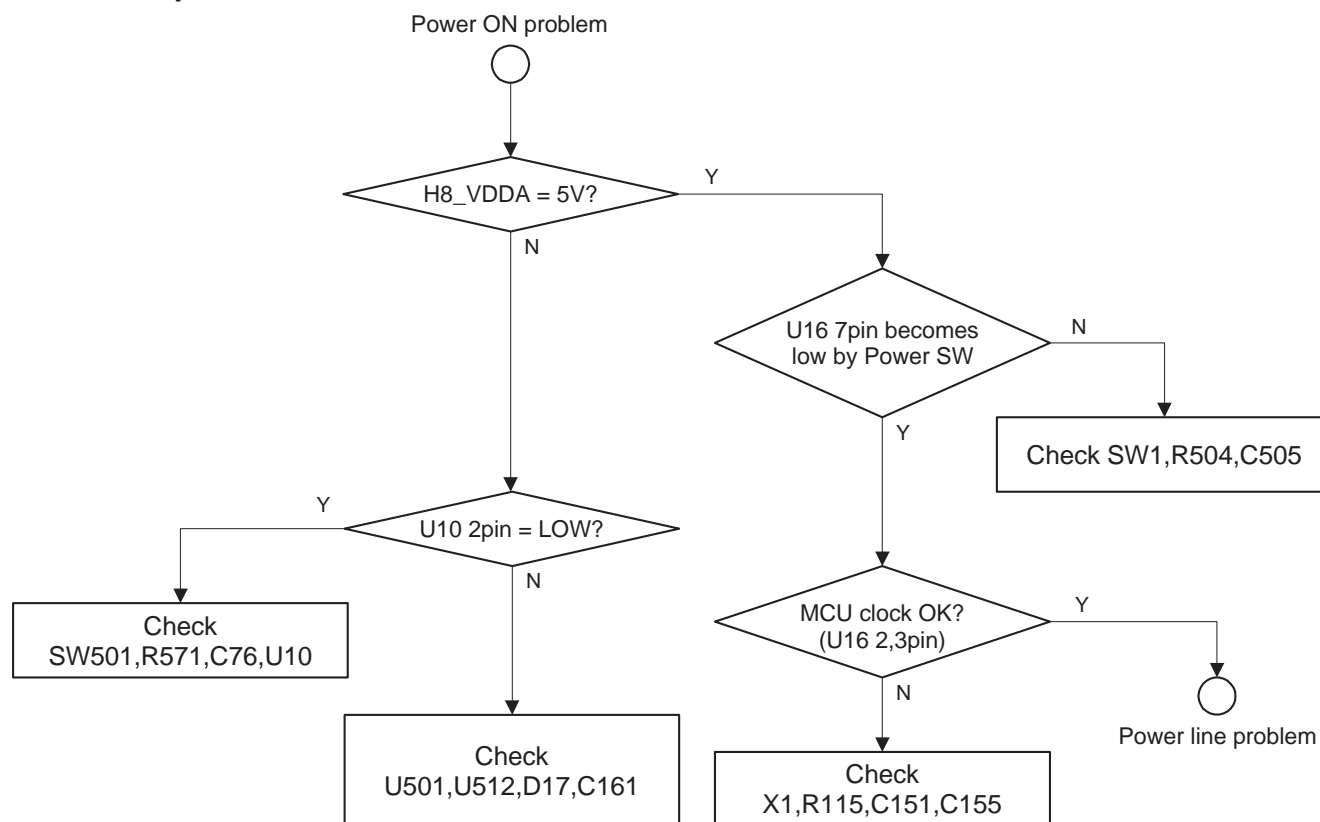
## 3. Power source abnormal



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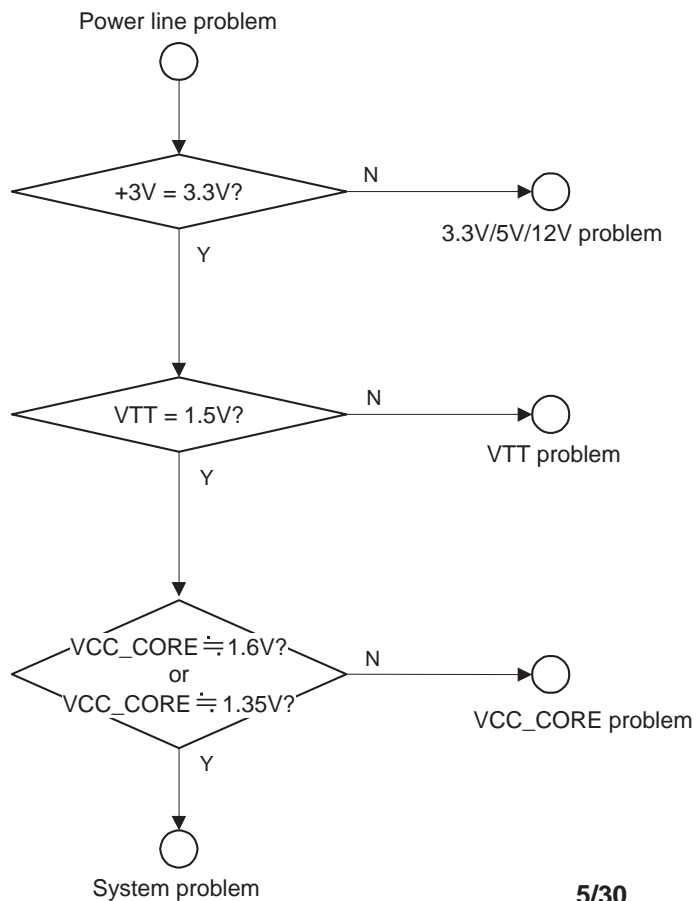
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#### 4. Power on problem



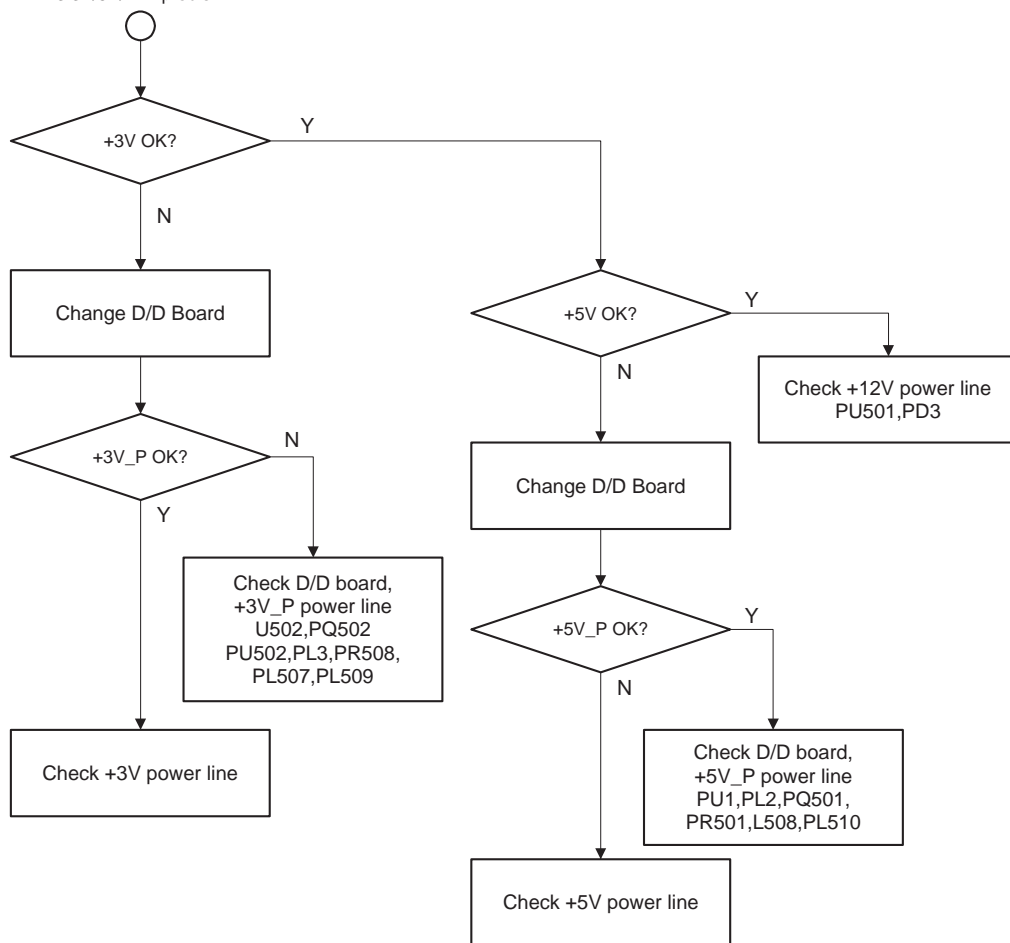
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## 5. Power line problem



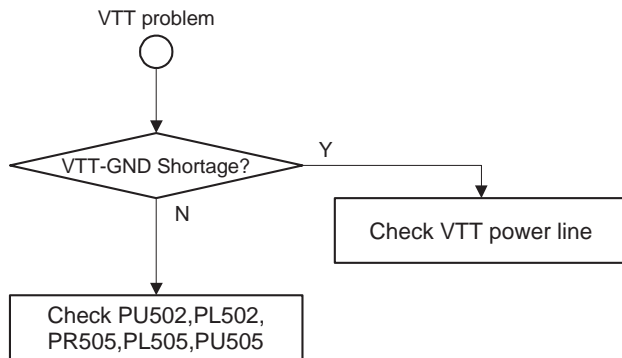
**5/30**

## 6. 3.3V/5V problem



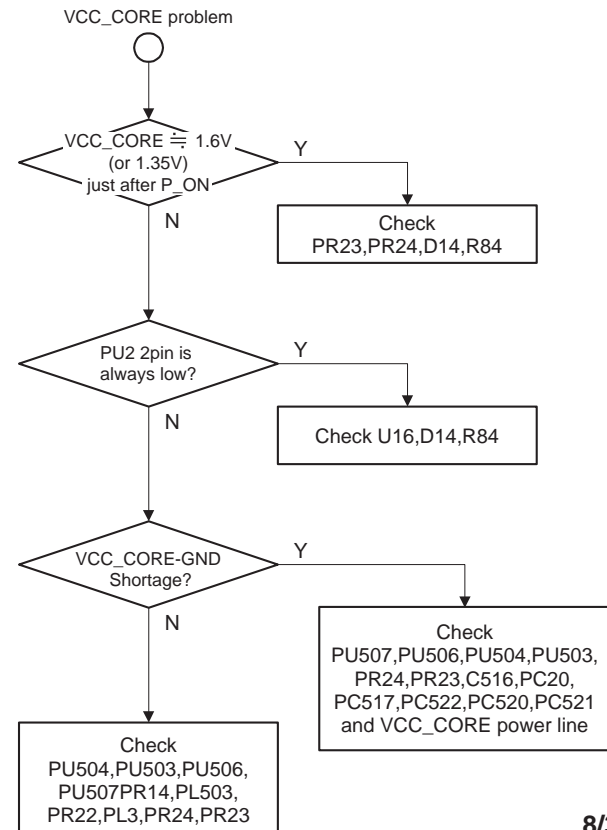
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## 7. VTT problem



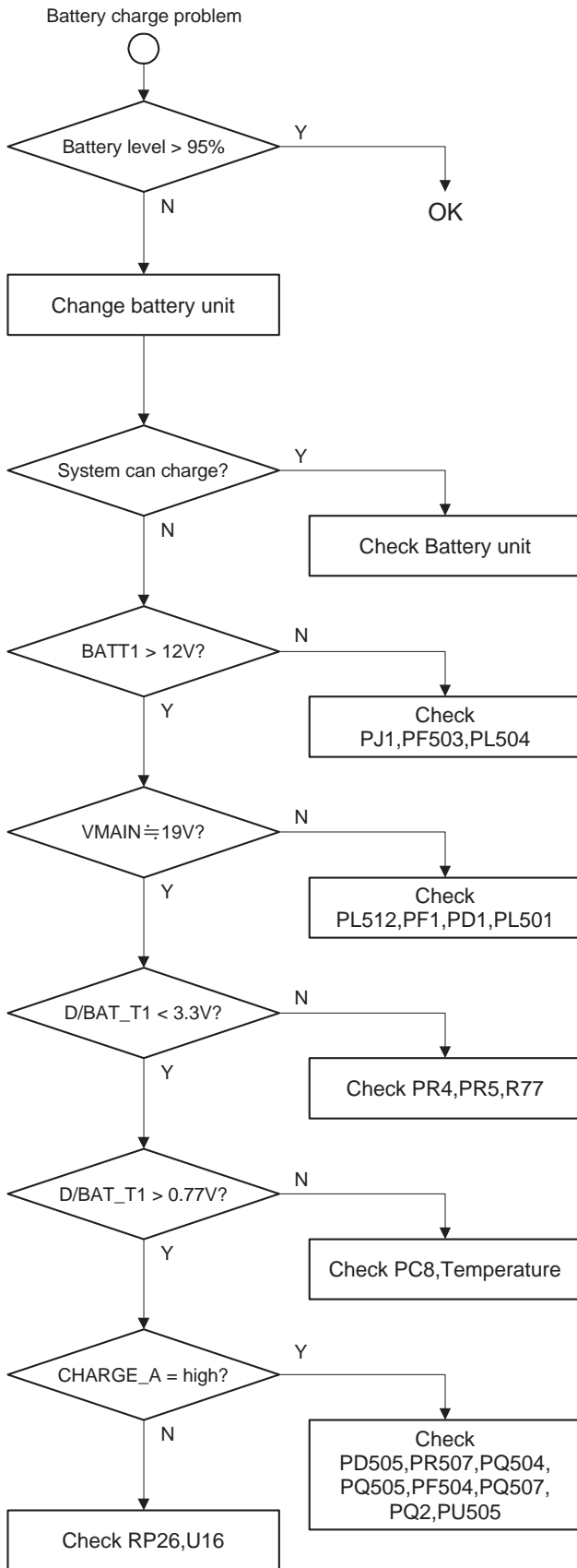
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## 8. VCC\_CORE problem

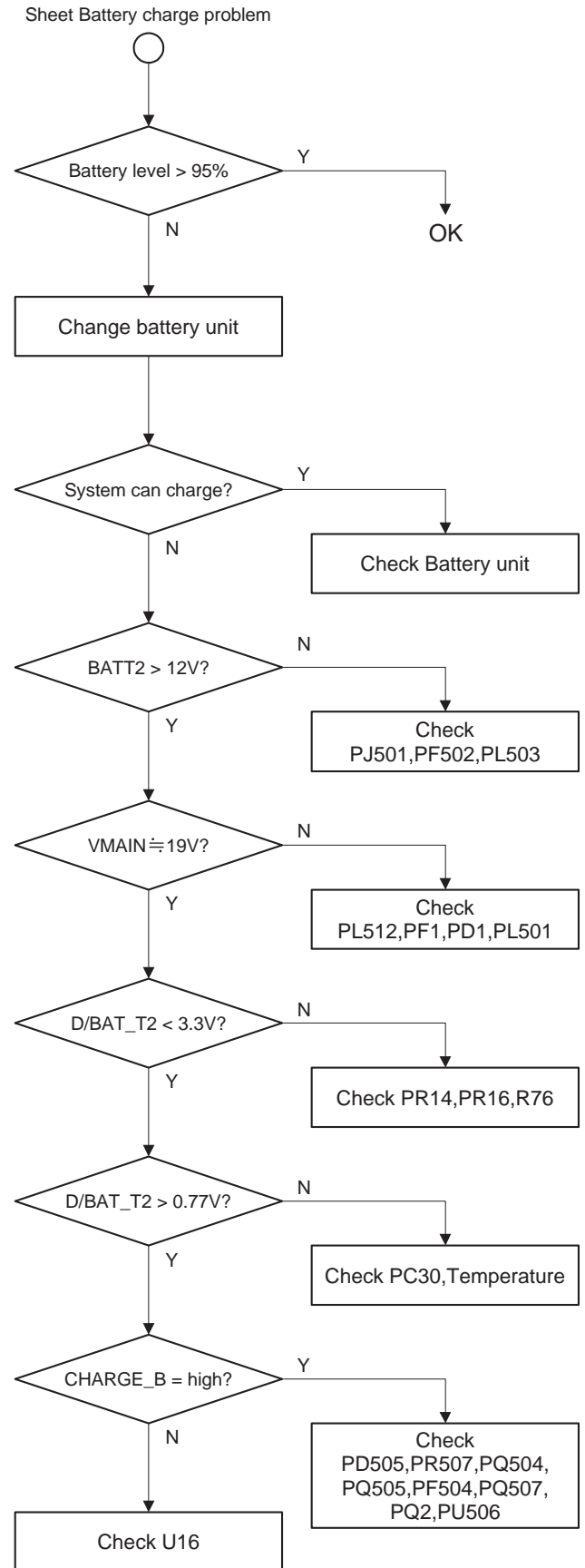


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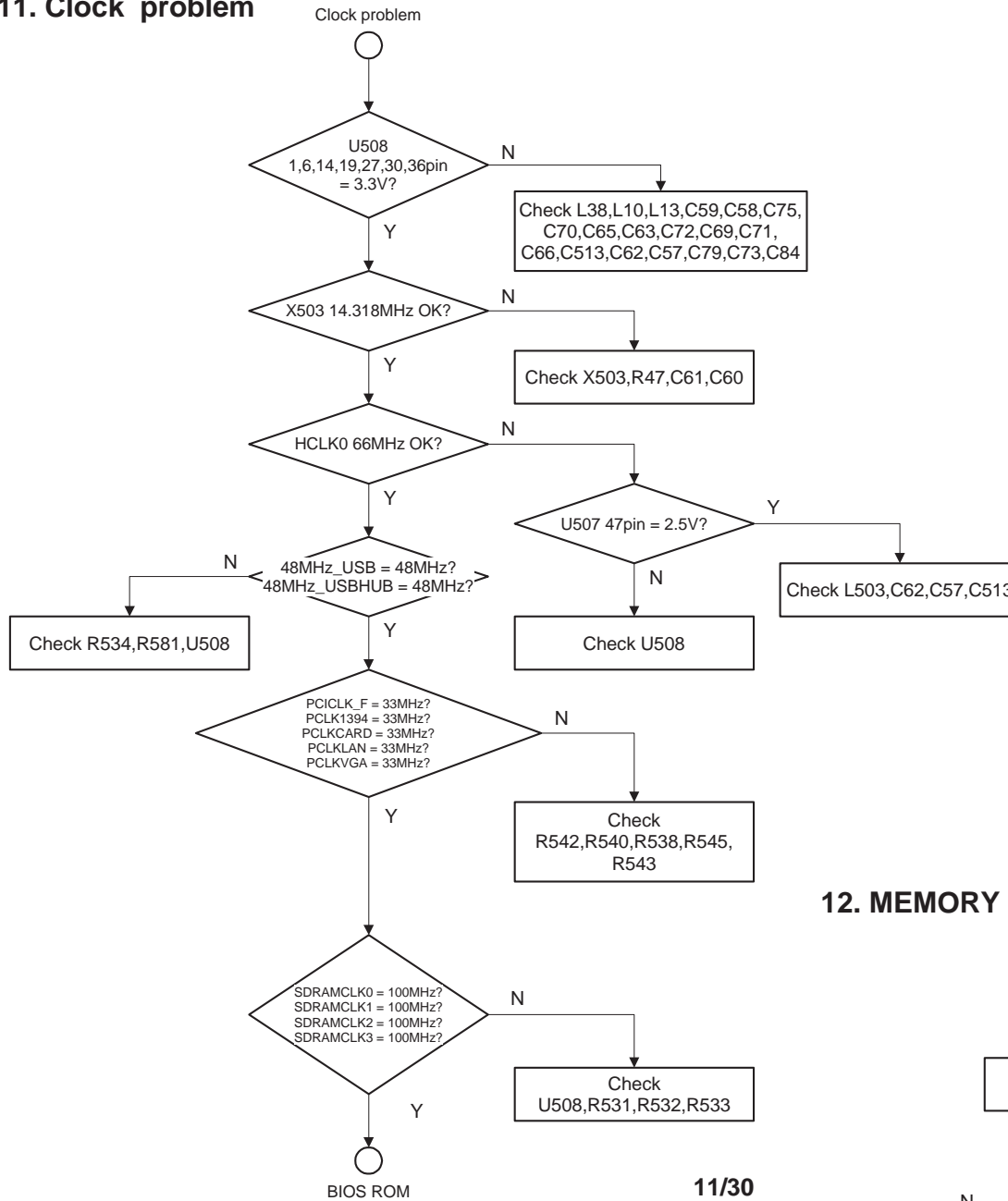
## 9. Battery charge problem



## 10. Sheet Battery charge problem

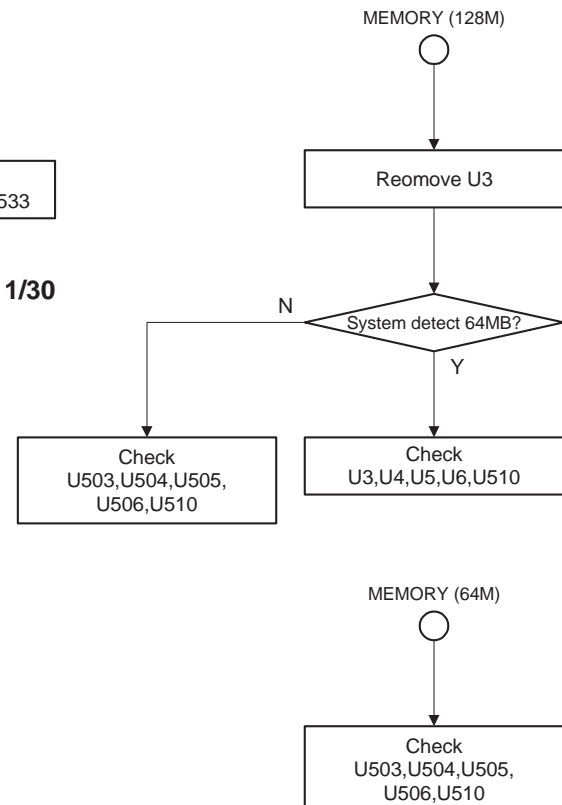


## 11. Clock problem



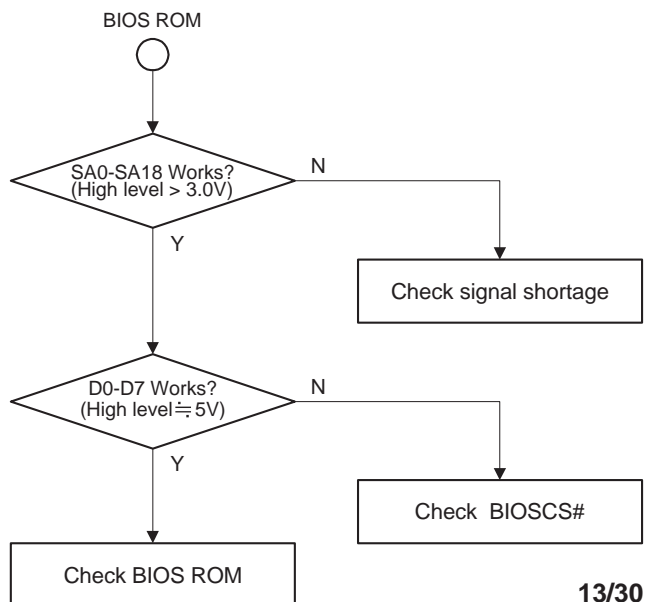
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## 12. MEMORY problem

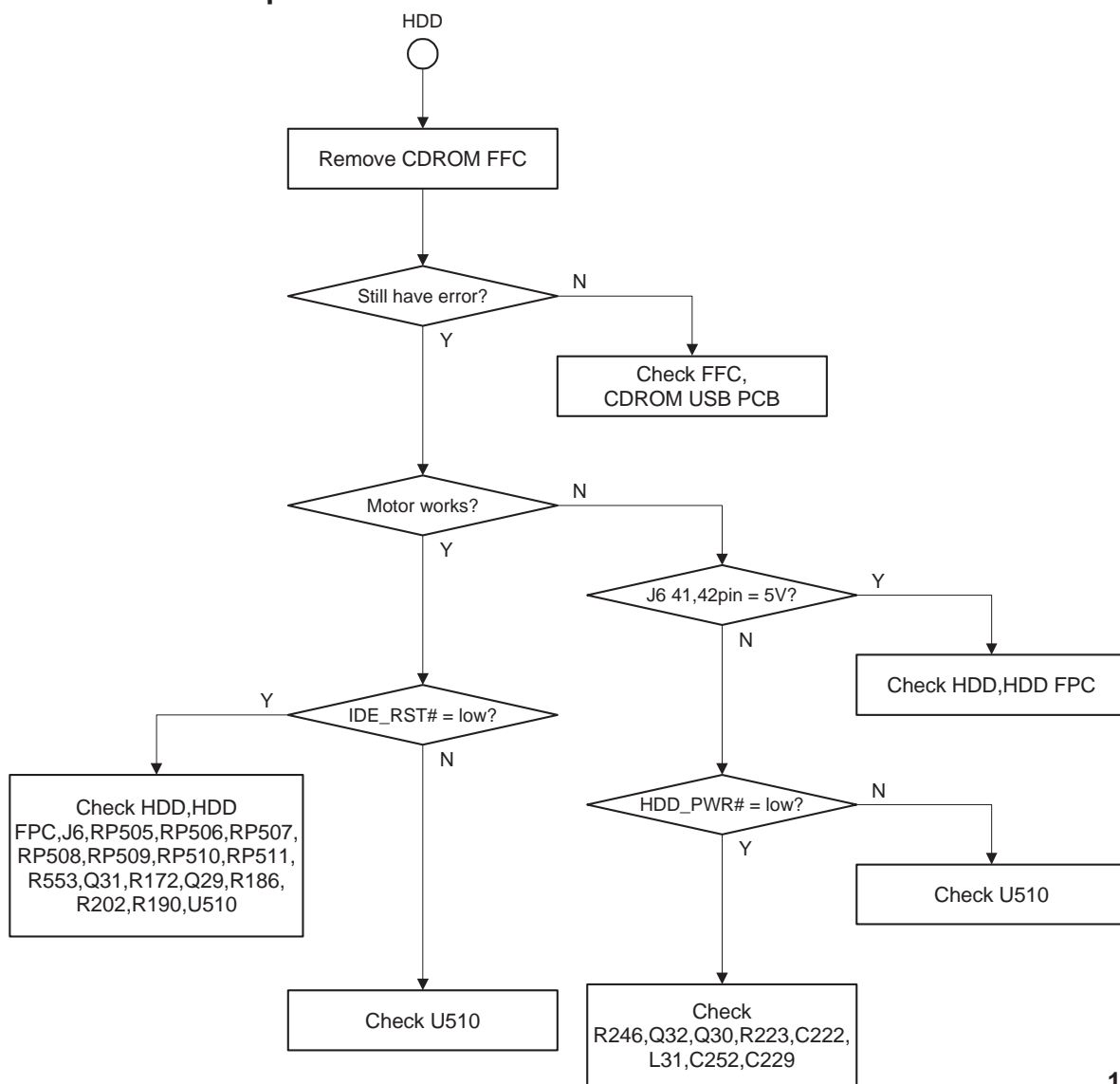


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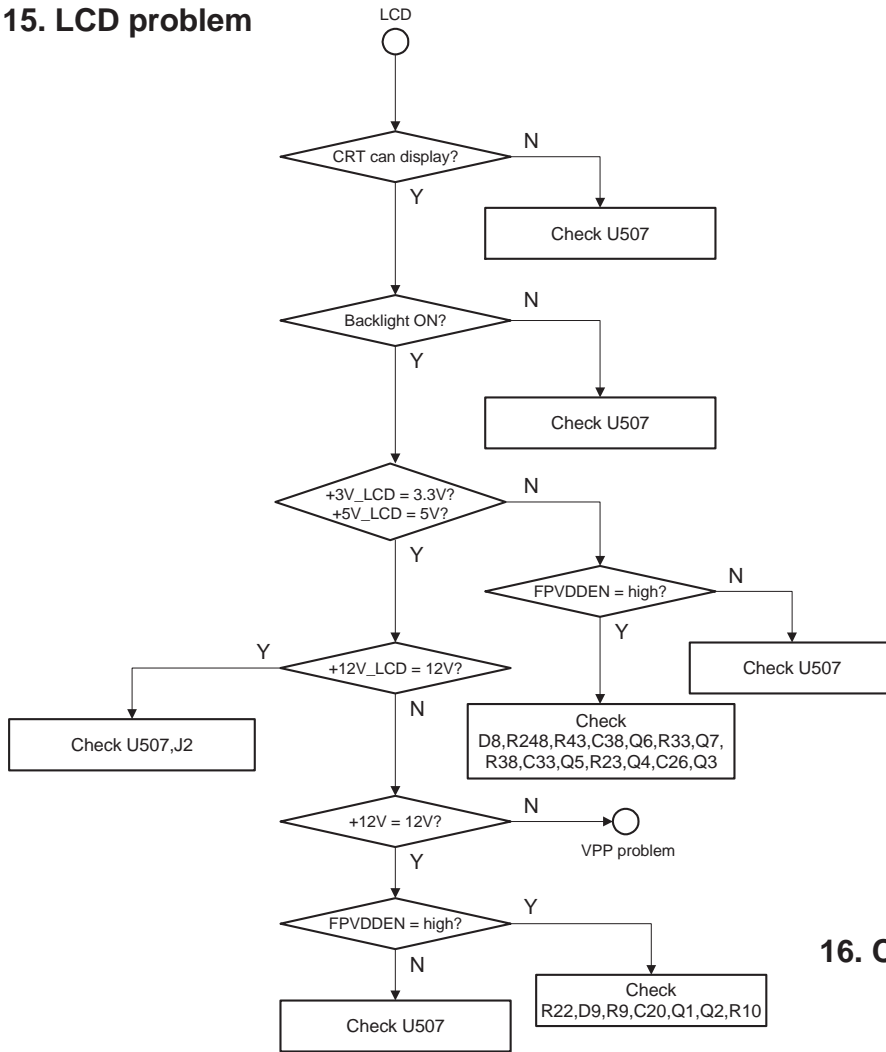
### 13. BIOS problem



### 14. HDD problem

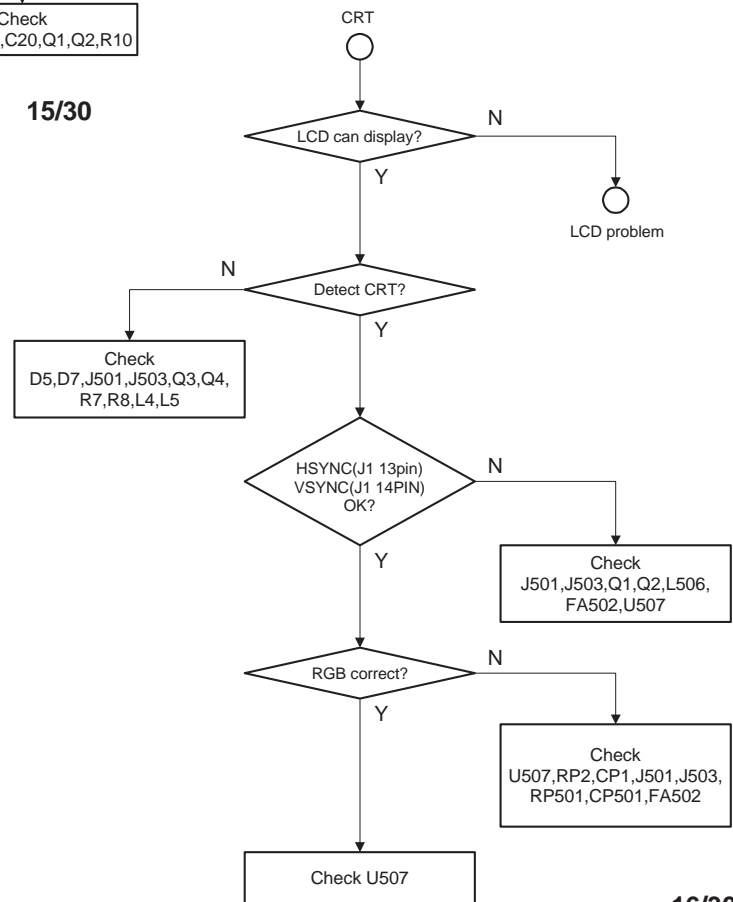


## 15. LCD problem



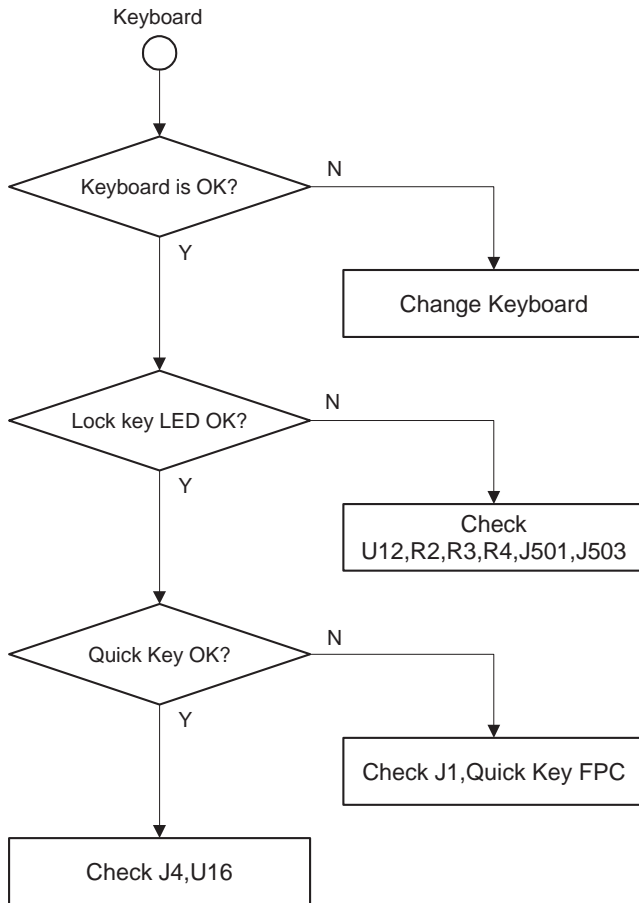
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## 16. CRT problem



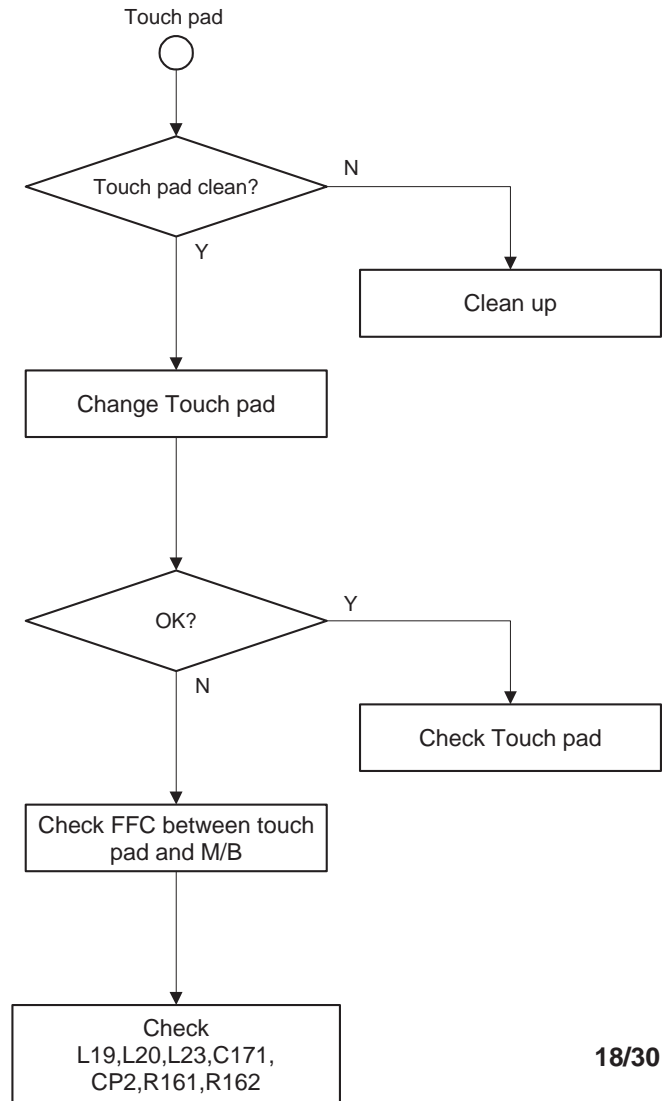
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## 17. Keyboard problem



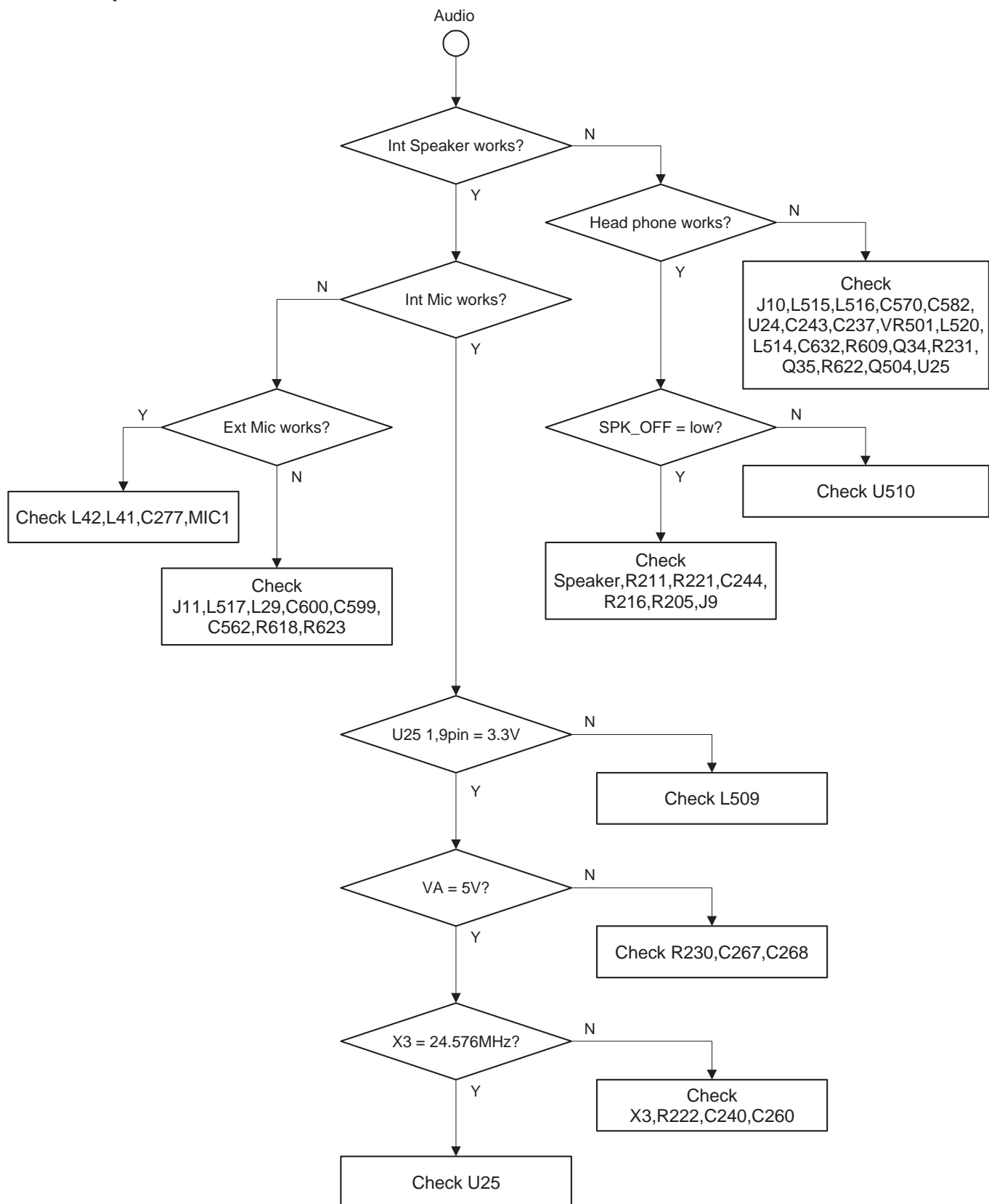
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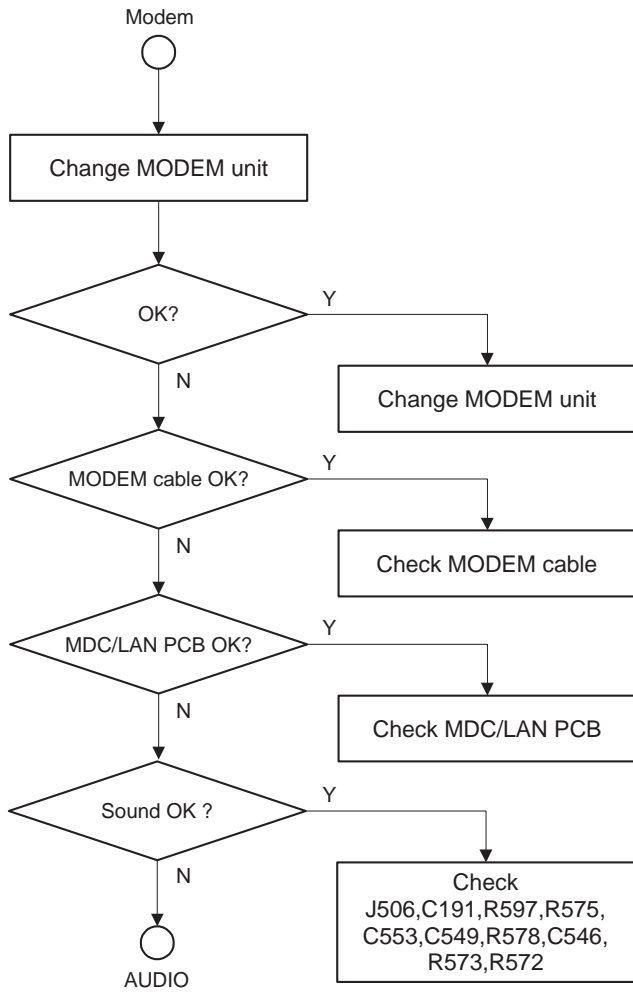
## 18. Touch pad problem



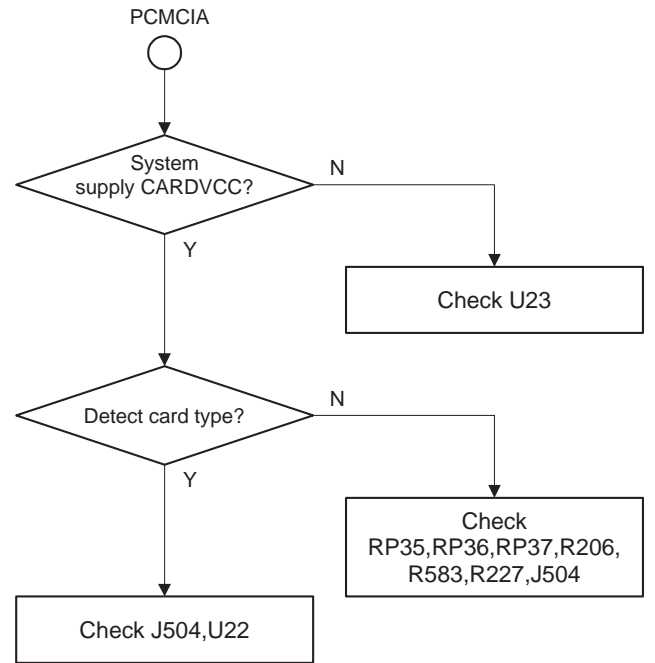
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## 19. Audio problem

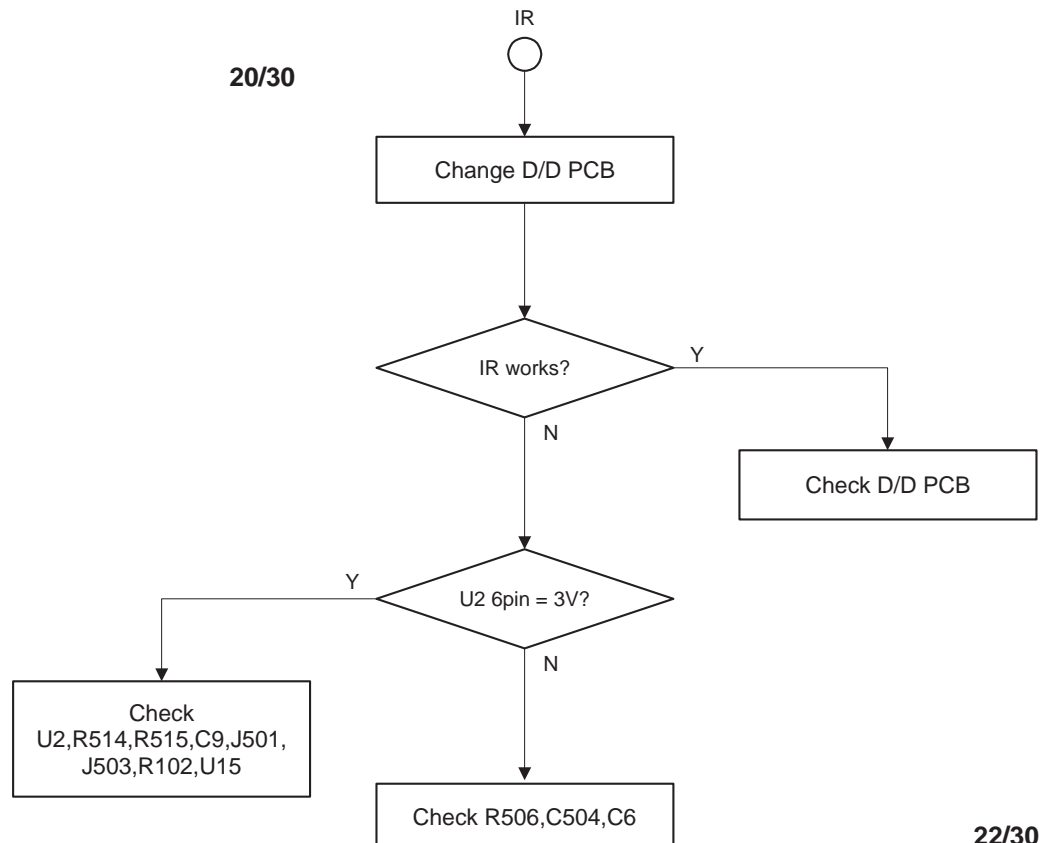


**20. Modem problem**

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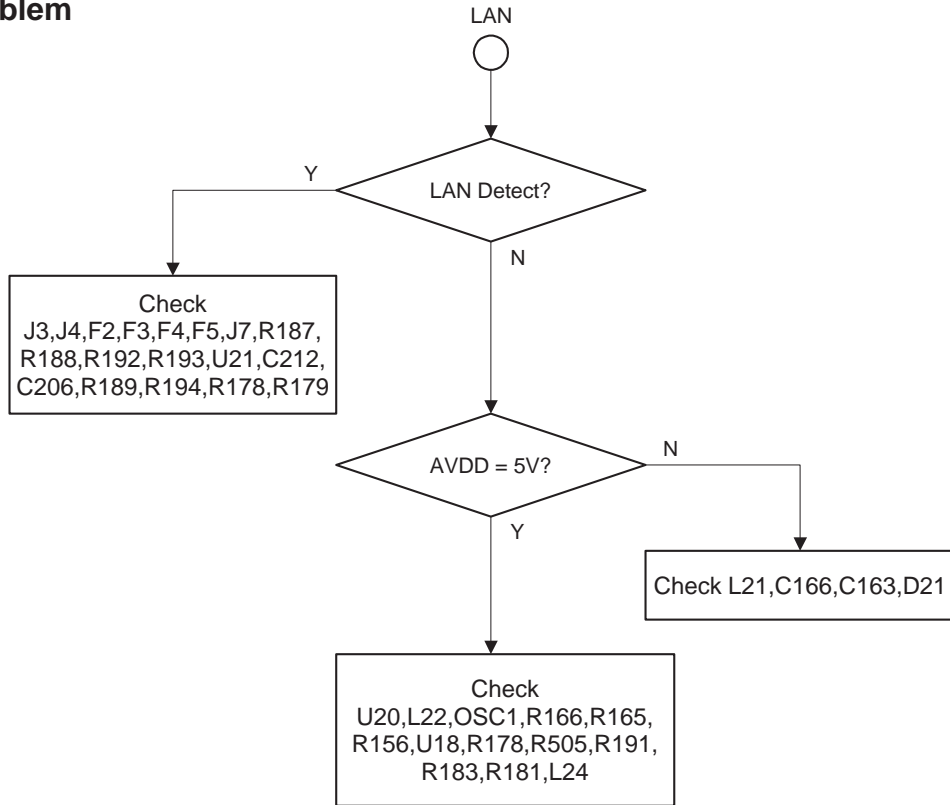
**21. PCMCIA problem**

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**22. IR problem**

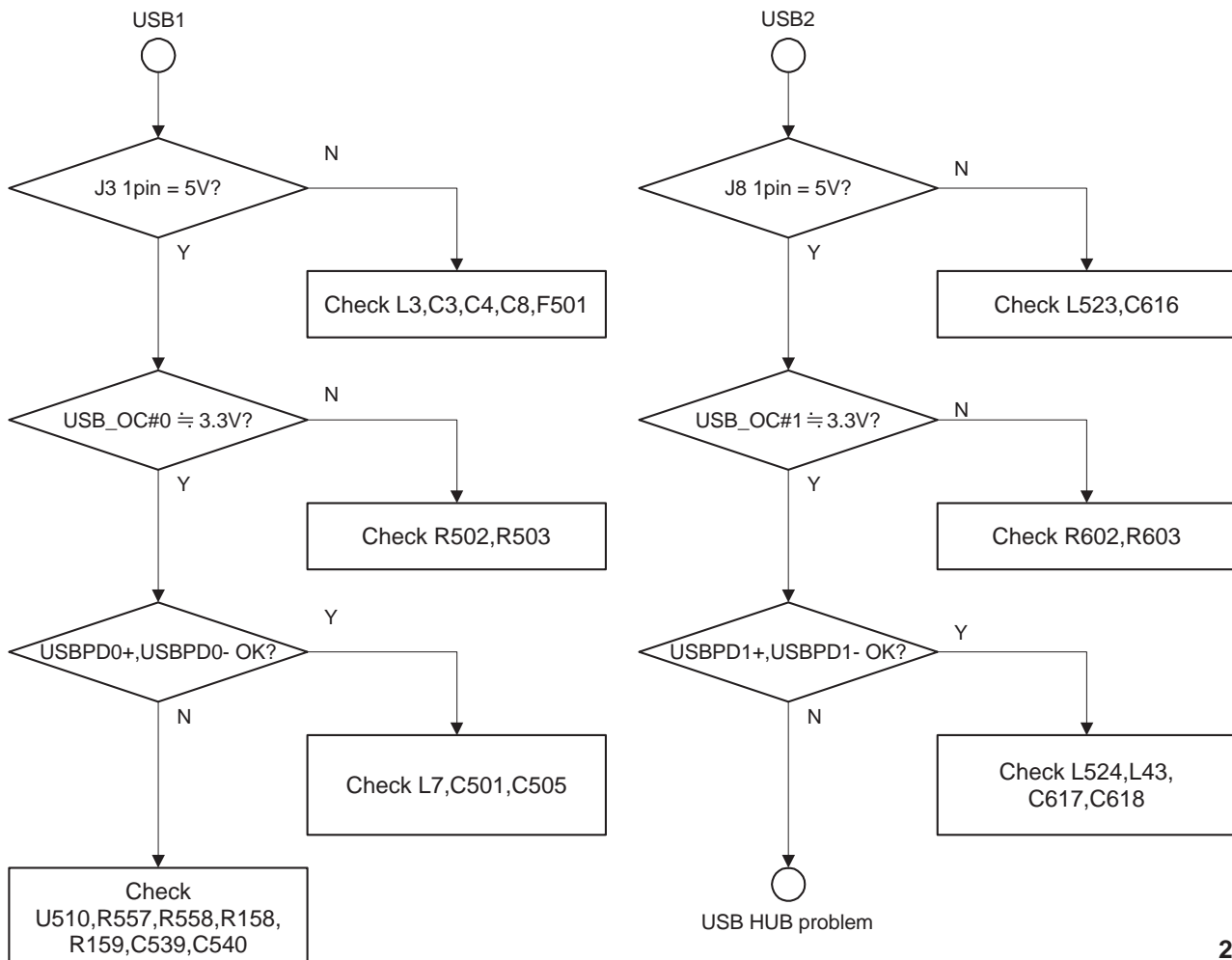
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## 23. LAN problem



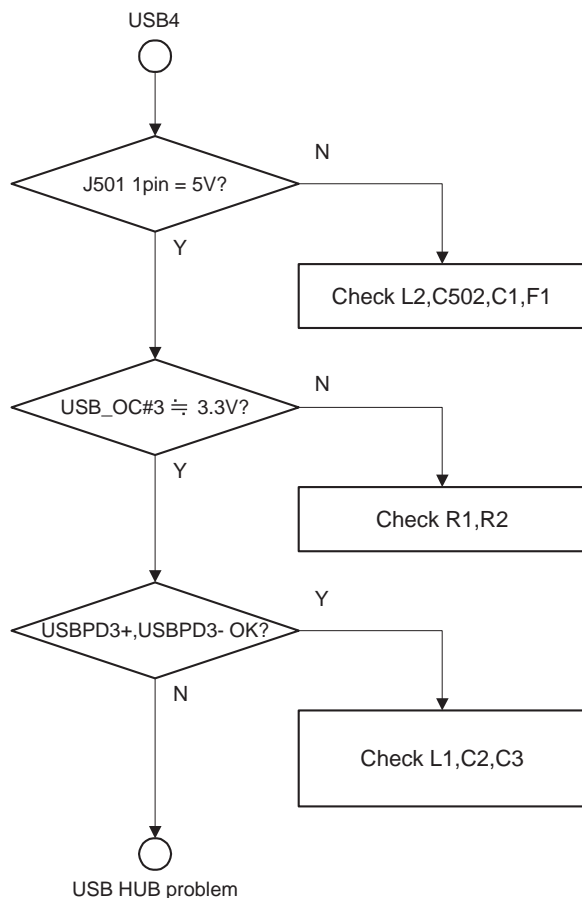
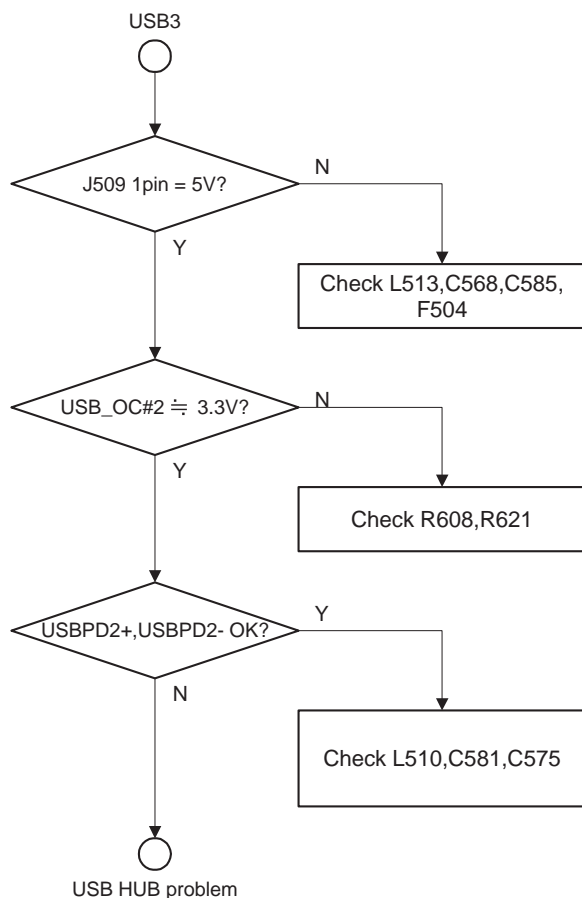
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## 24. USB1 problem



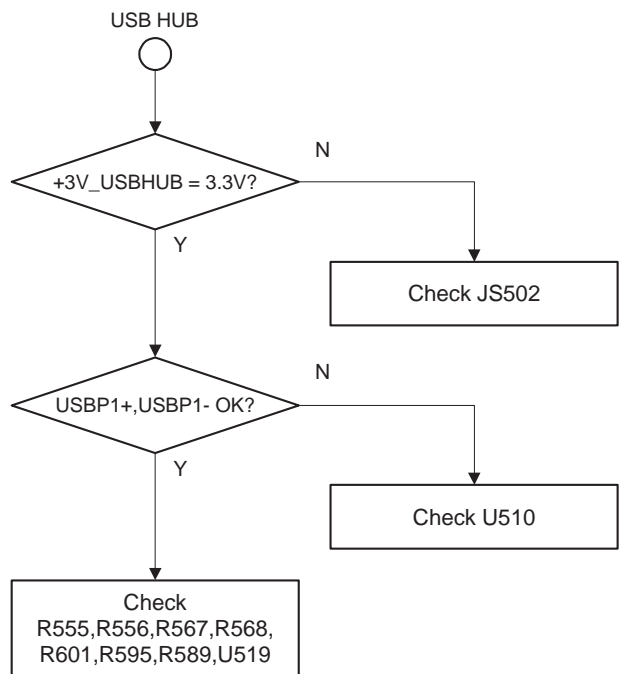
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## 25. USB2 problem



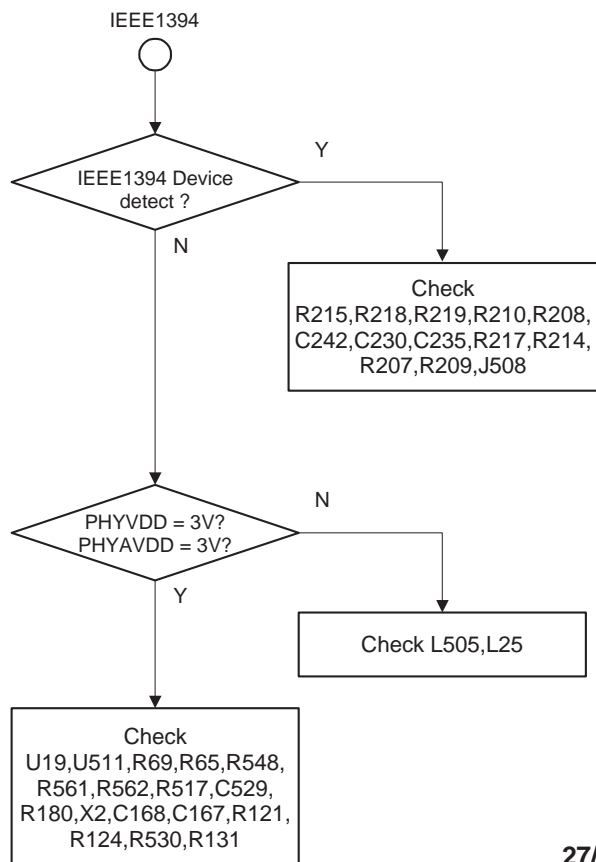
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## 26. USB HUB problem



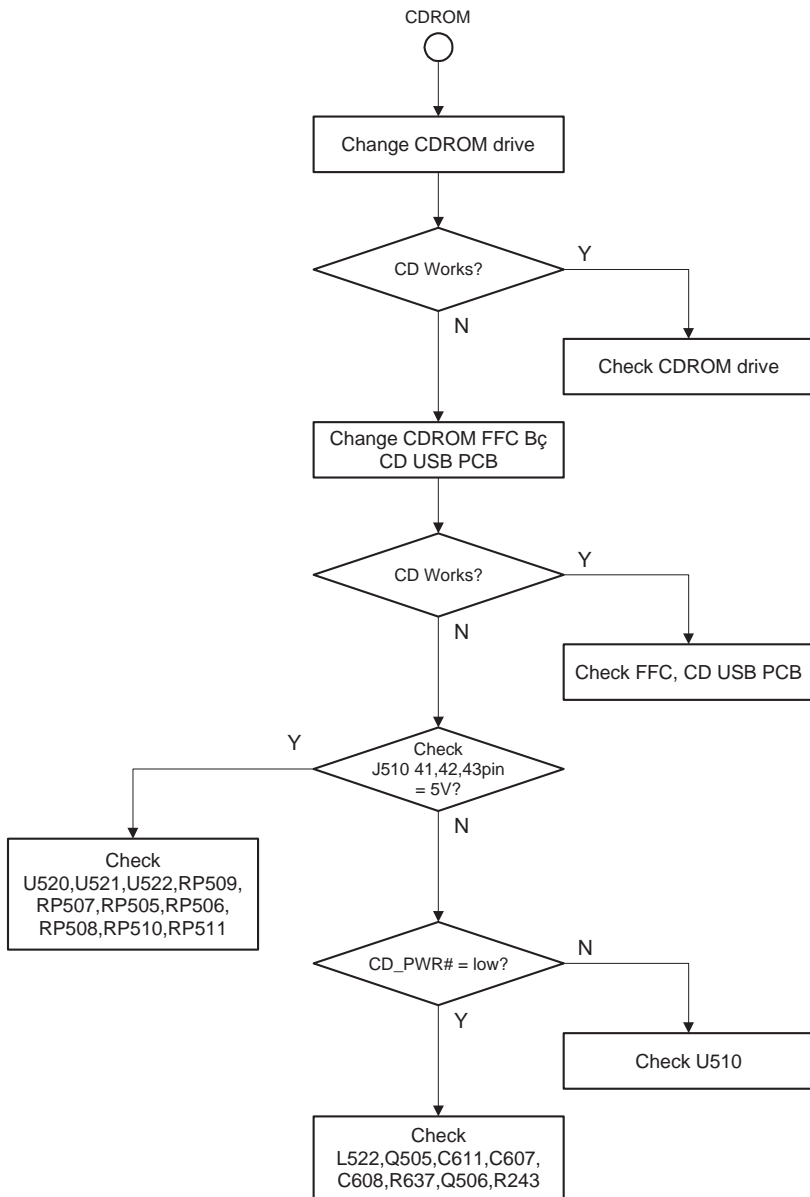
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## 27. IEEE1394 problem



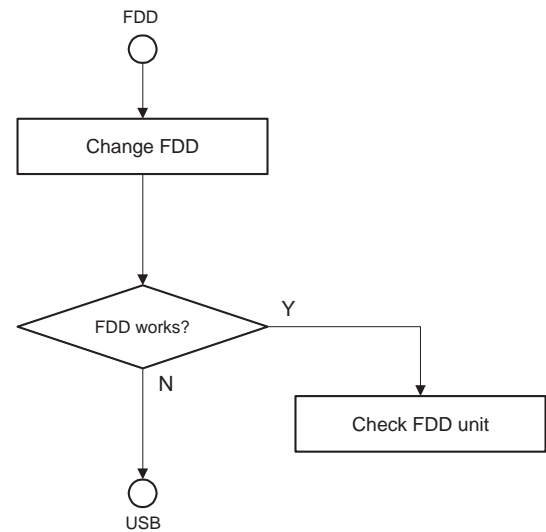
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## 28. CDROM problem



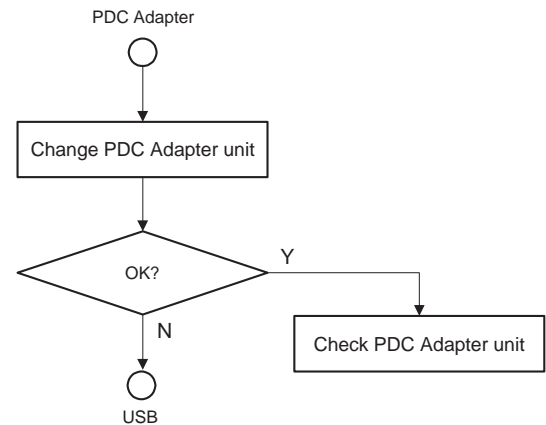
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## 29. FDD problem



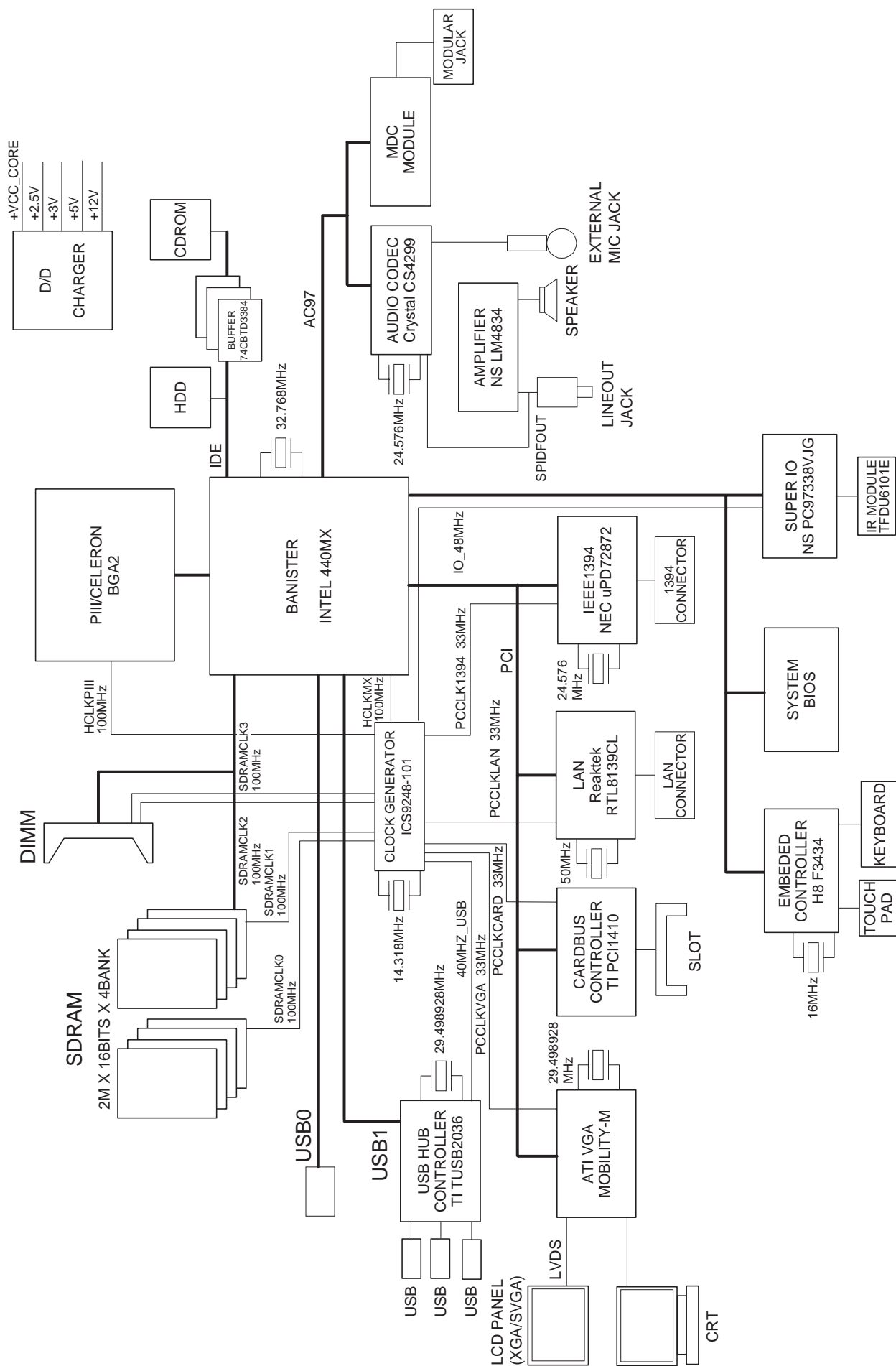
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## 30. PDC Adapter problem

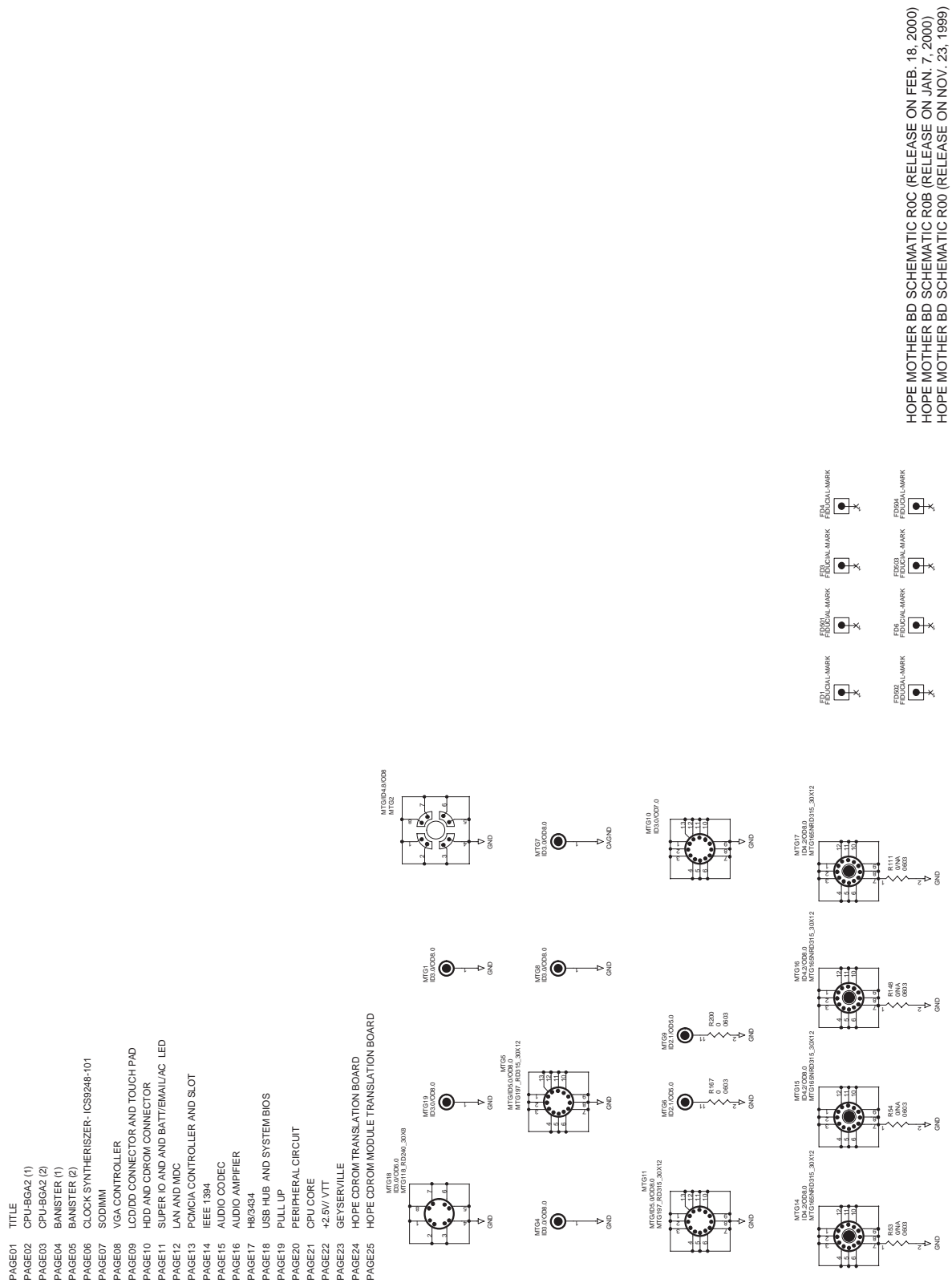


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# CHAPTER 4. BLOCK DIAGRAM

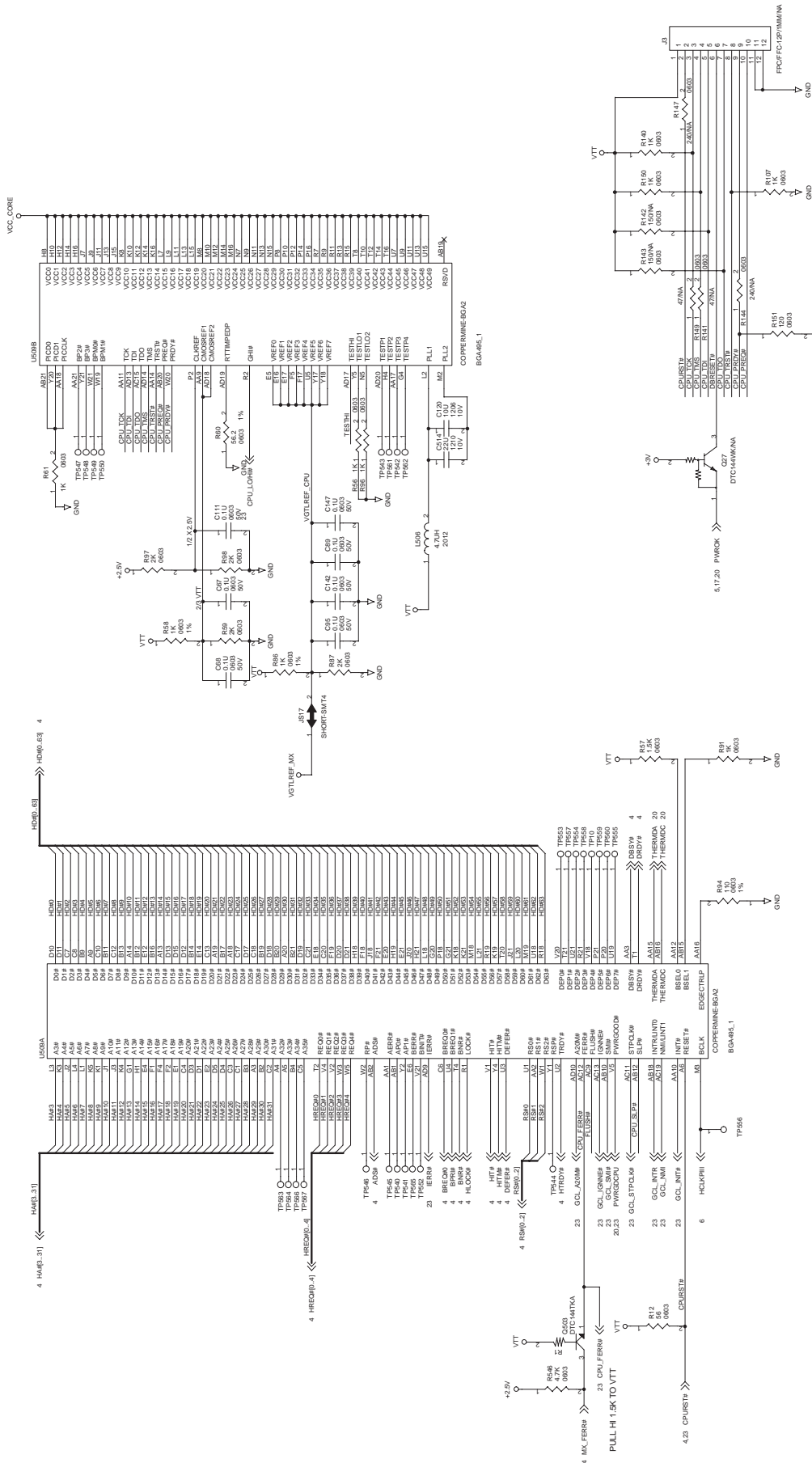


## 1/25

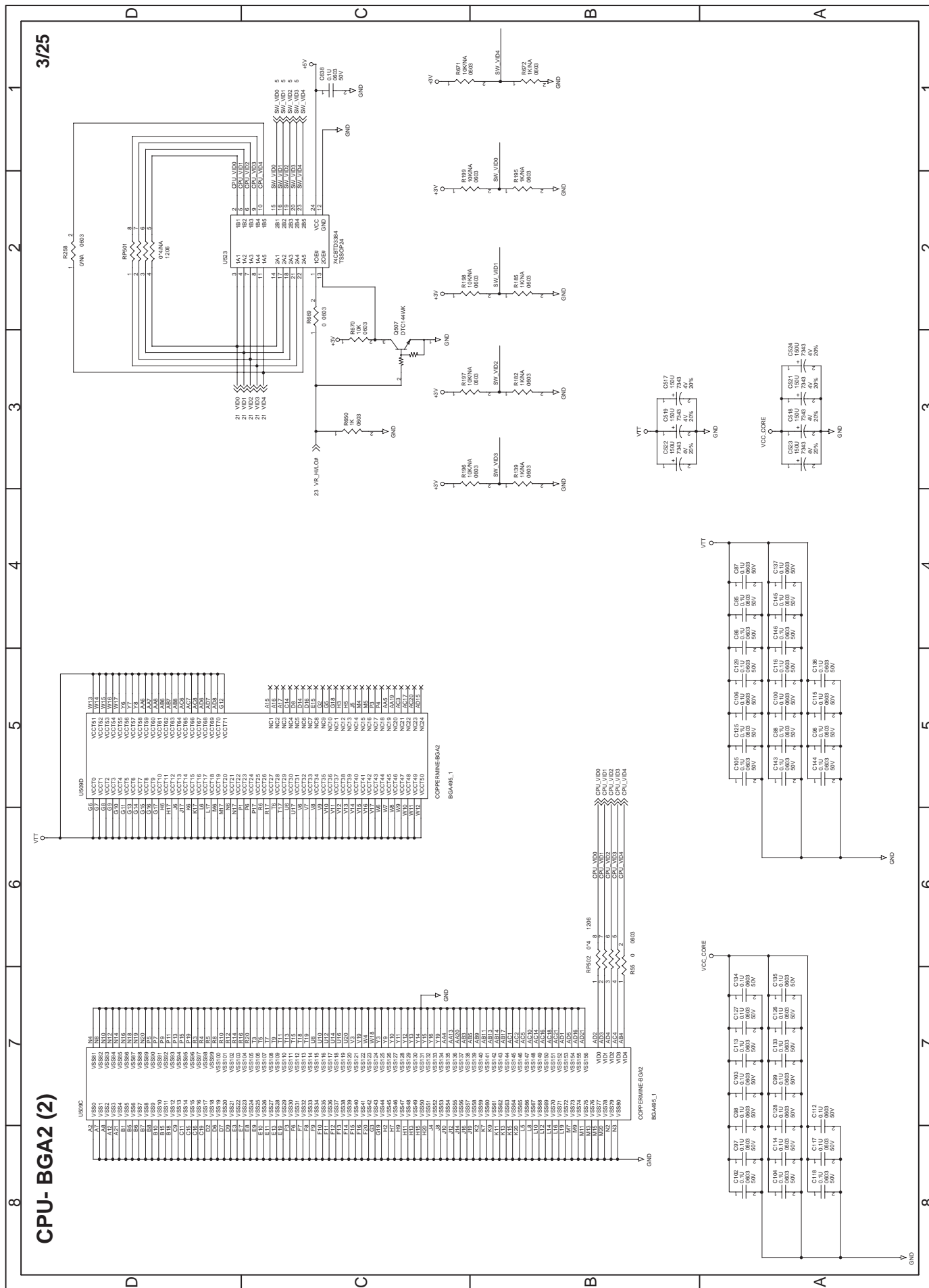


CPU- BGA2 (1)

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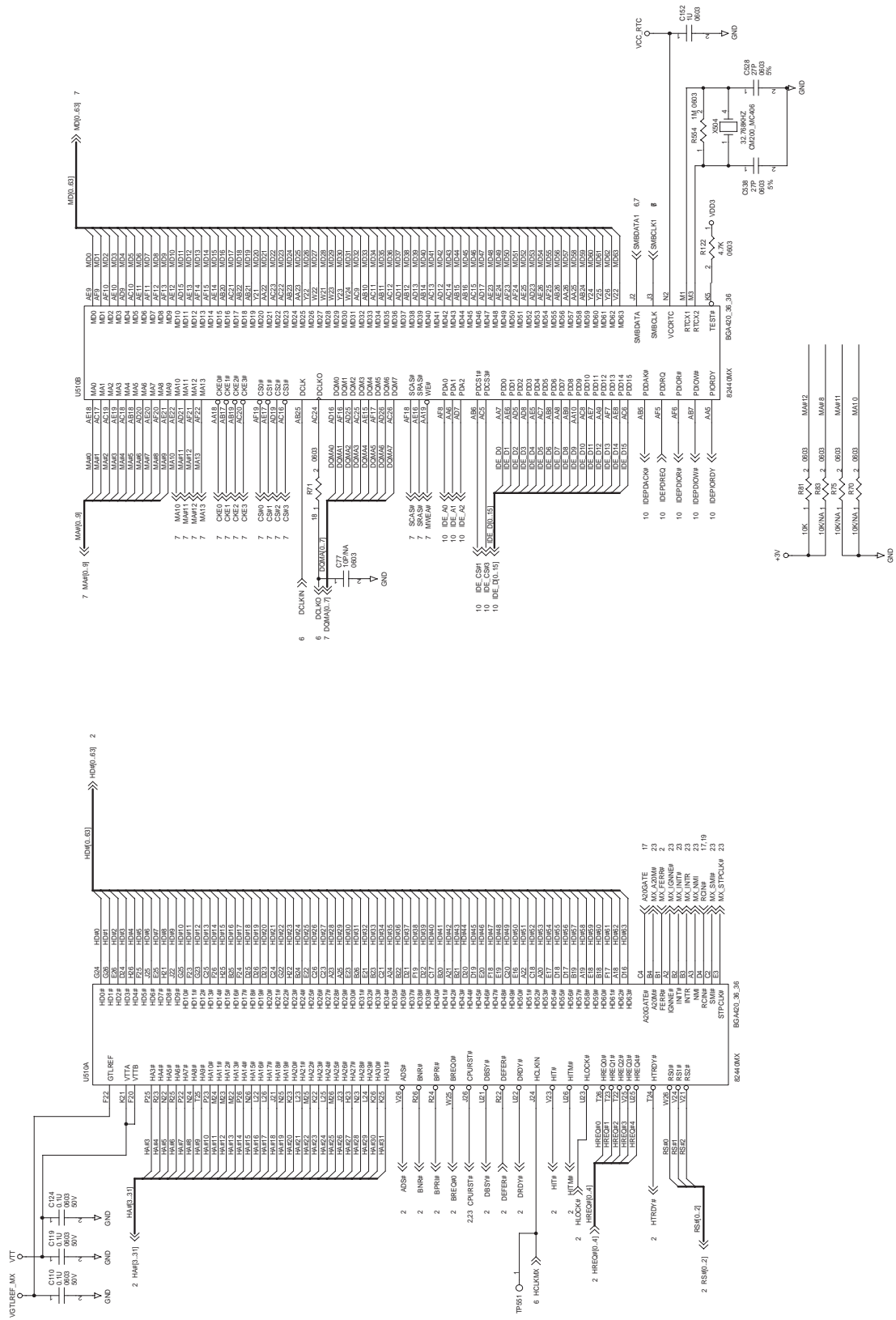


SELECT PROCESSOR SYSTEM BUS SPEED	
BSEL(1:0)	SYSTEM BUS FREQUENCY
00	66MHz
01	100MHz
10	RESERVED
11	133MHz



## BANISTER (1)

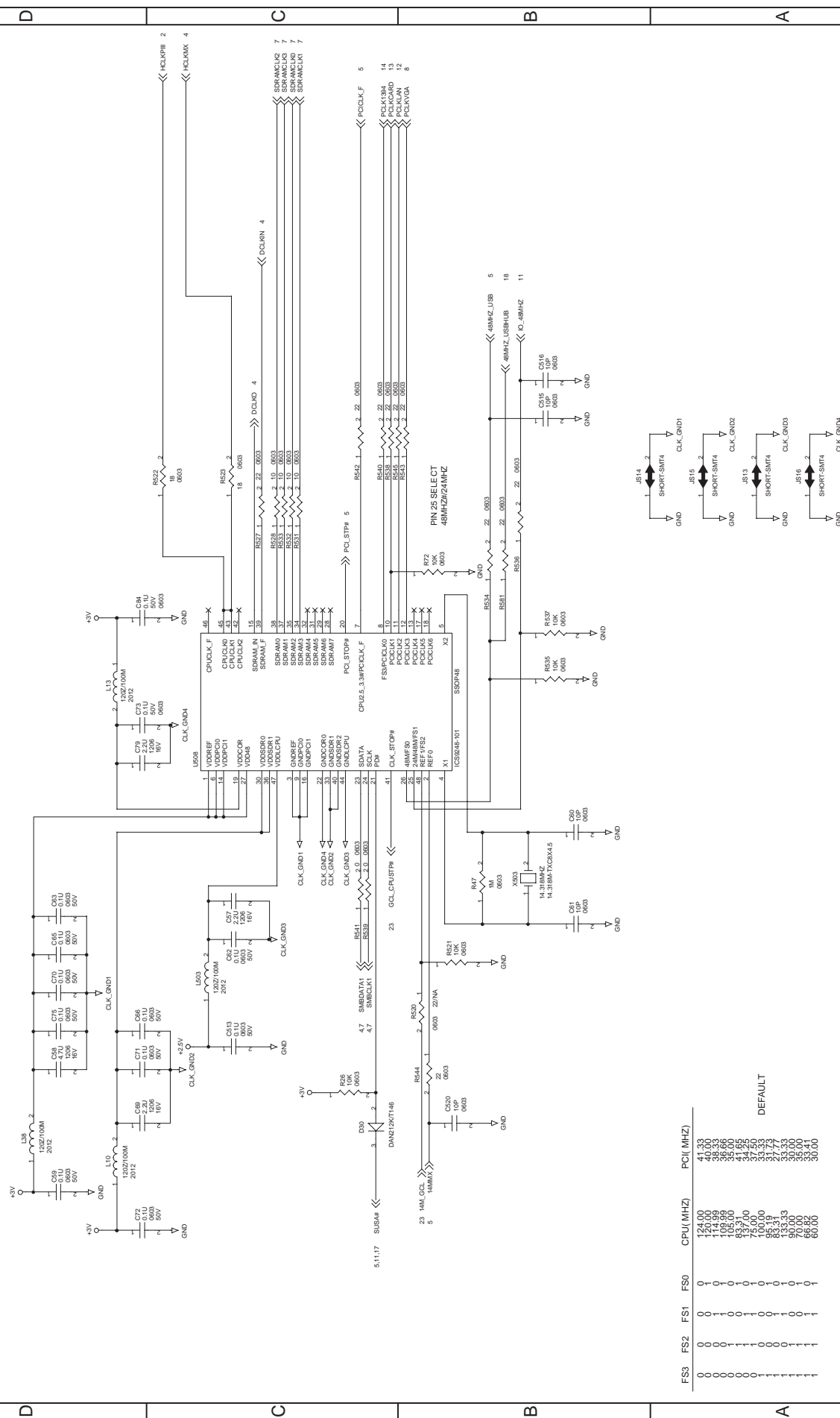
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STRAP	HIGH	LOW
MAH2	100MHz	68MHz
MAH8	HIGH SPEED VCO	NORMAL
MAH11	IOQD4	1
MA10	QUICK START	STOP CLOCK

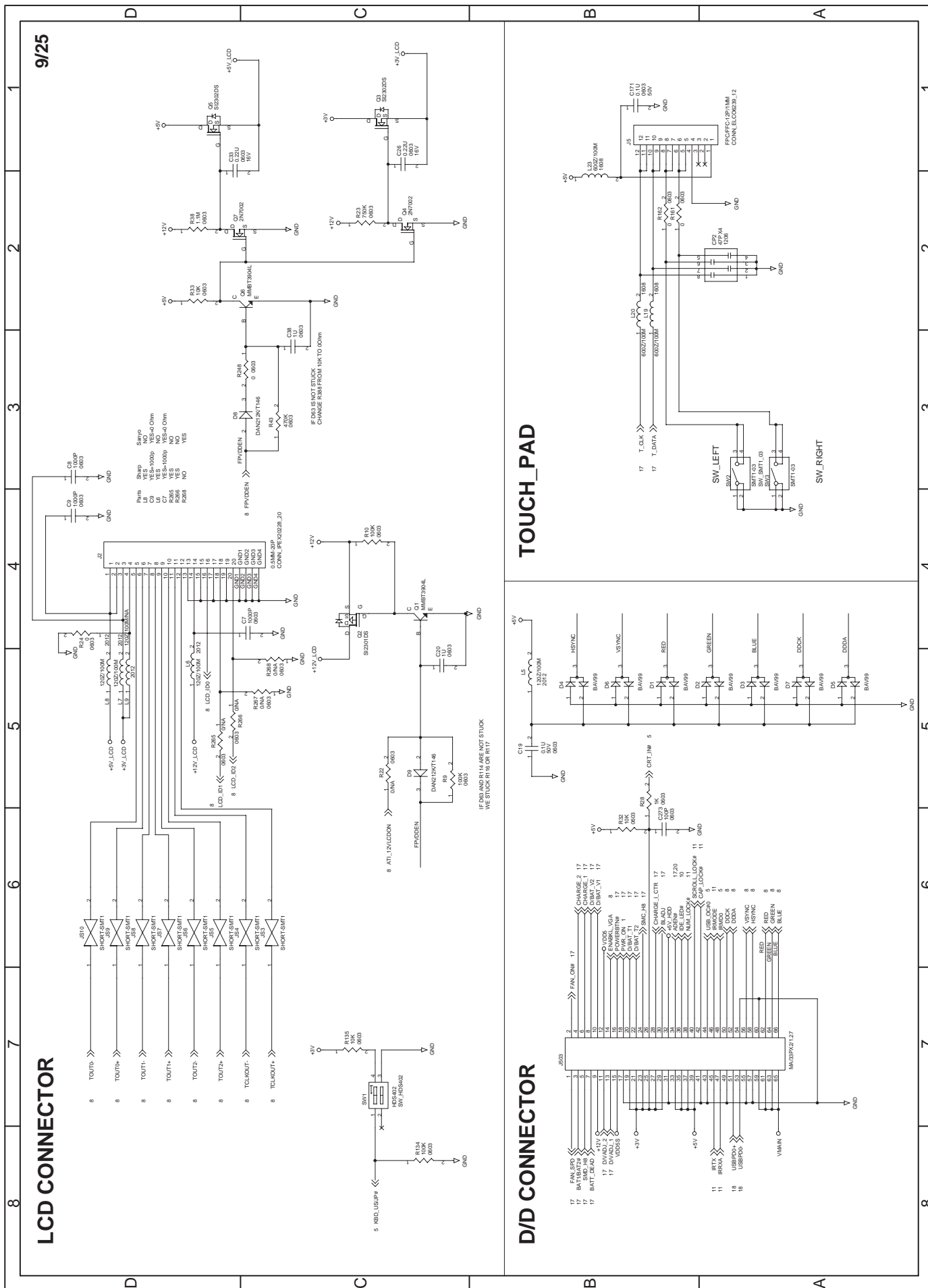


## CLOCK SYNTHESIZER

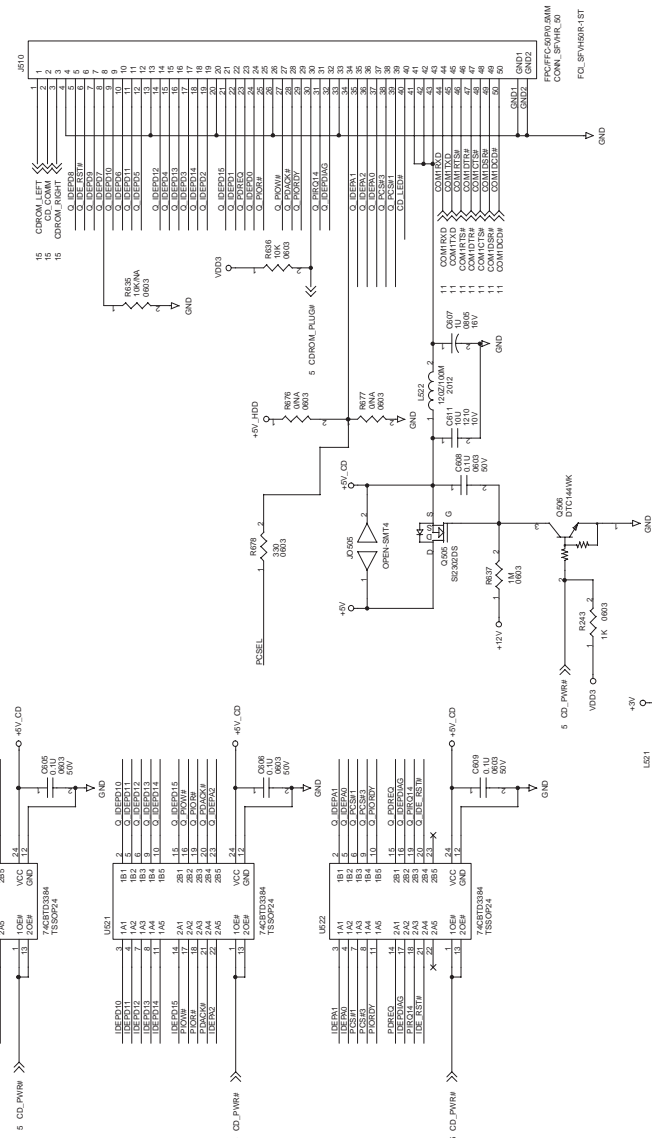




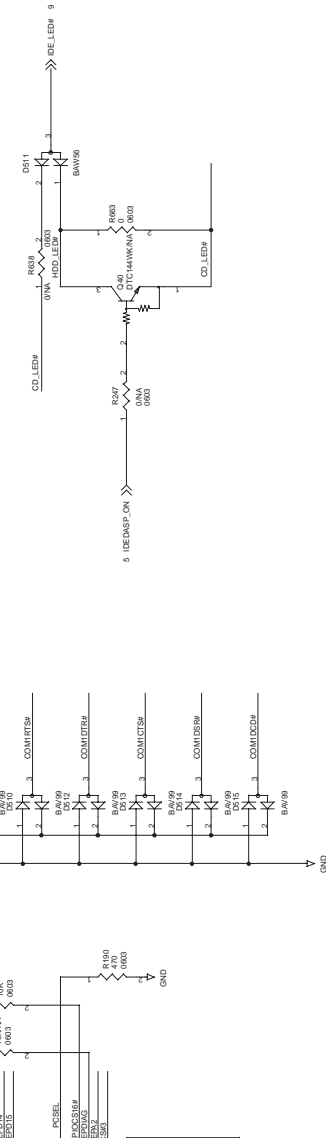




## CDROM FFC CONNECTOR



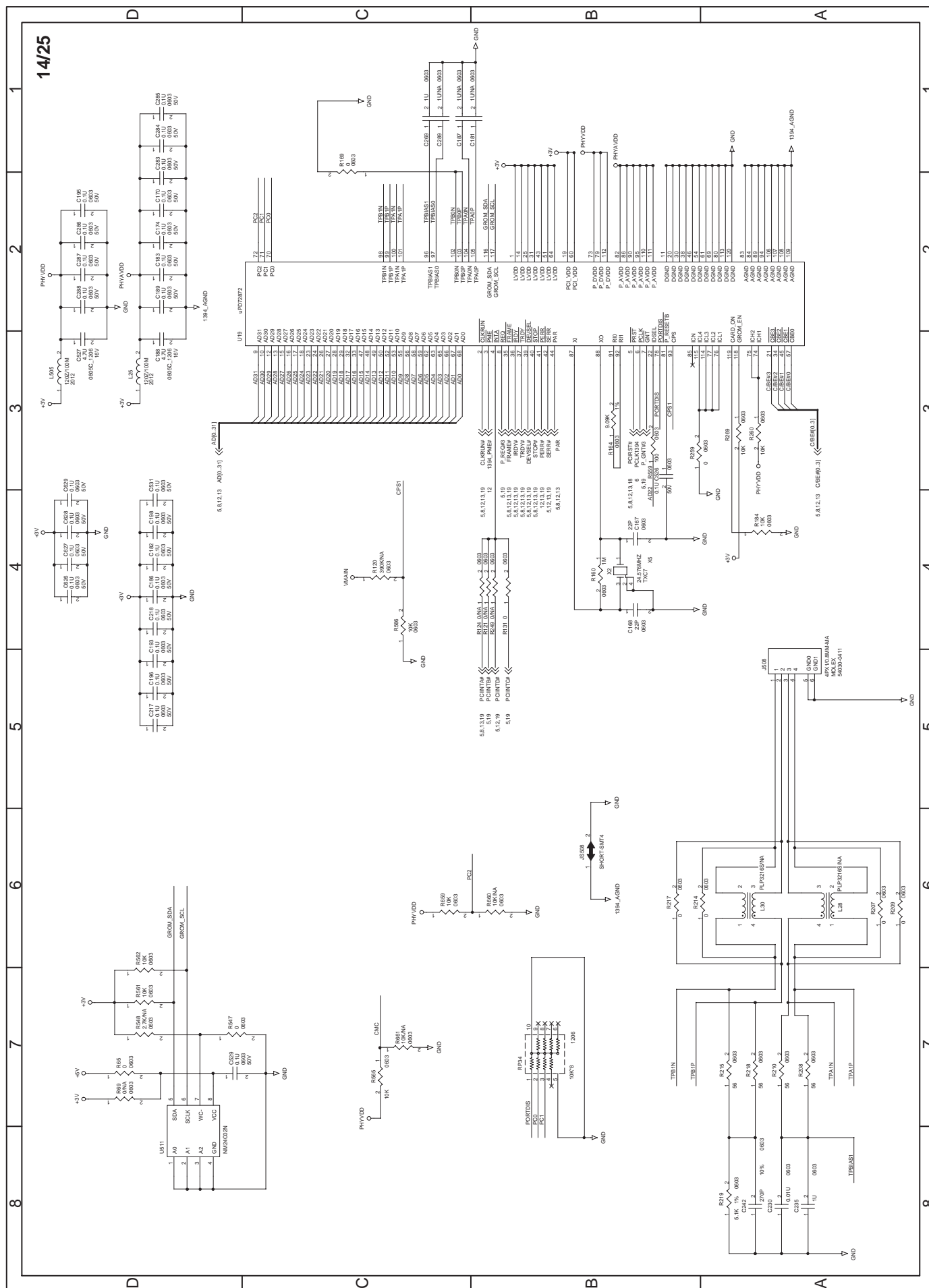
## CDROM DIAG AND IDE ACTIVE LED





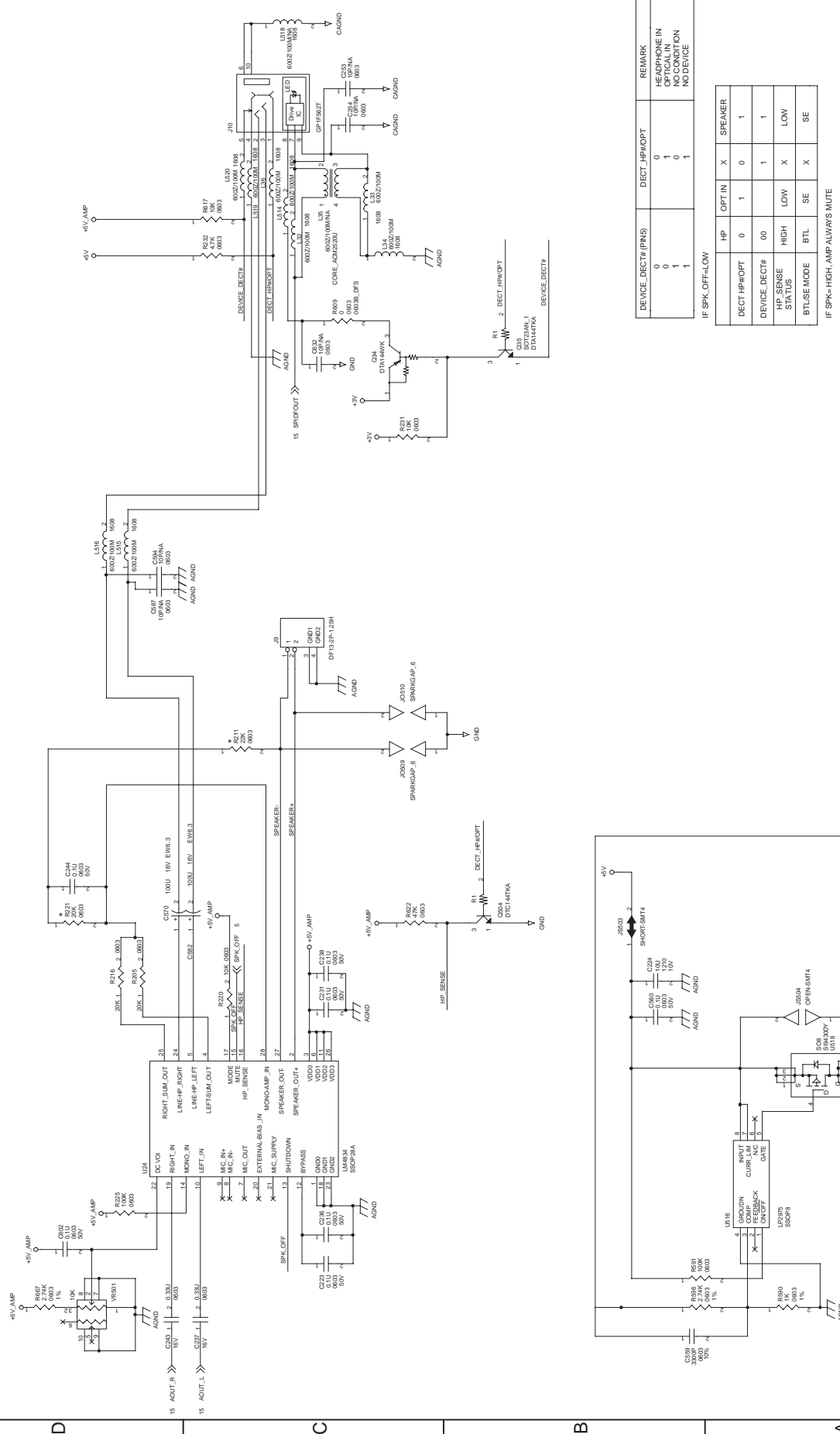




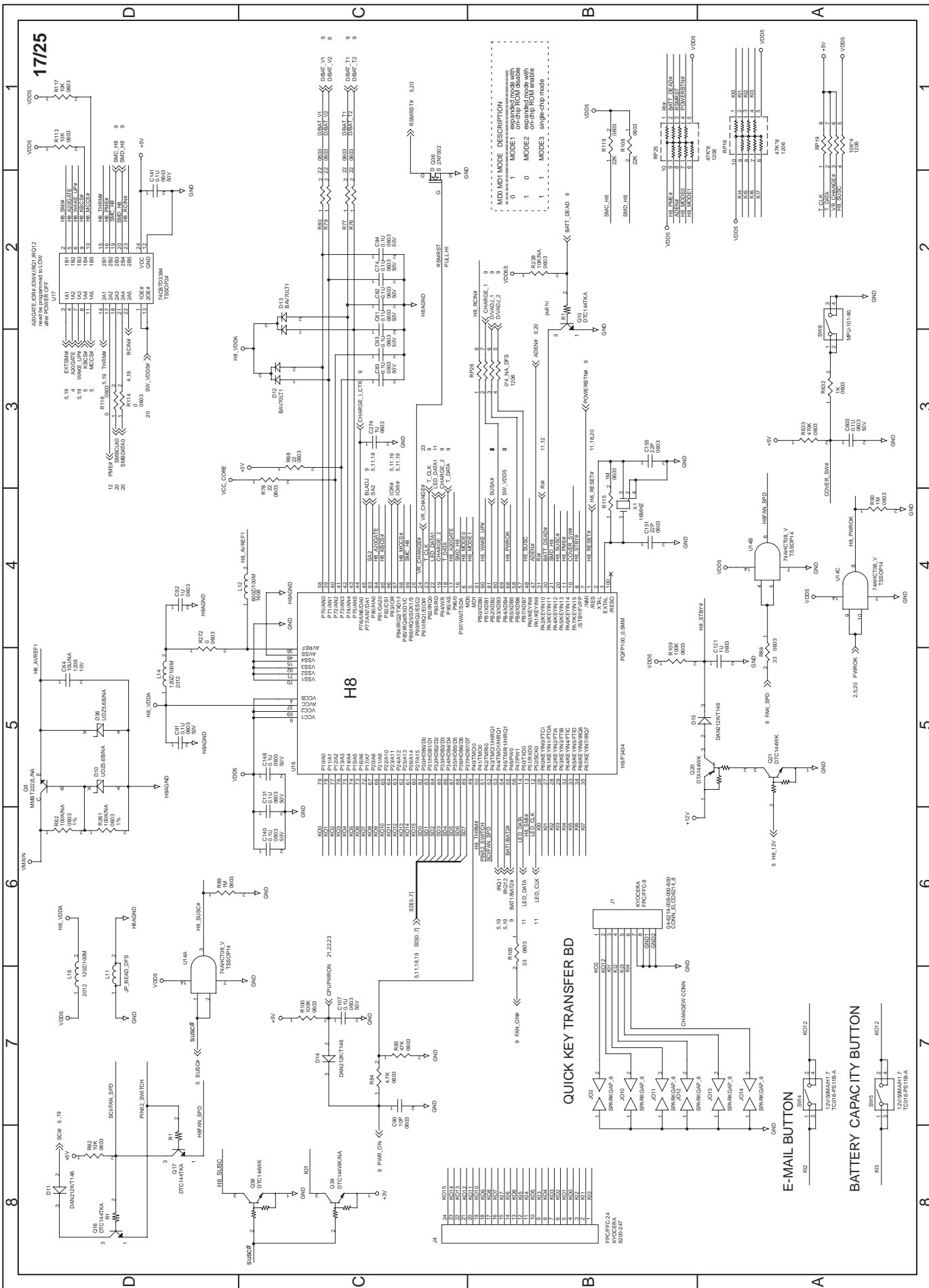




# AUDIO AMPLIFIER

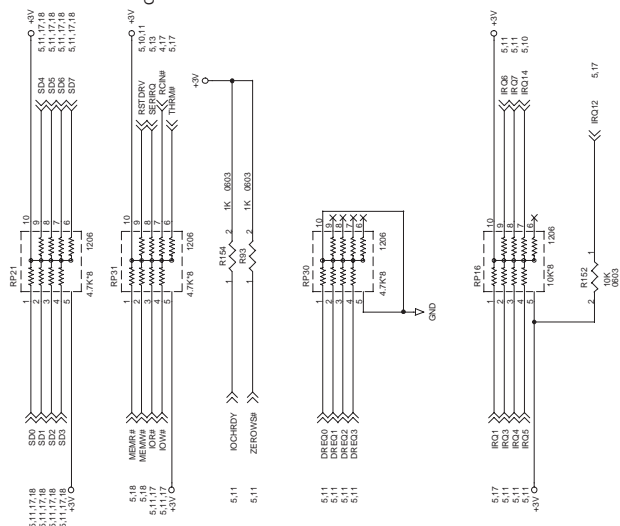
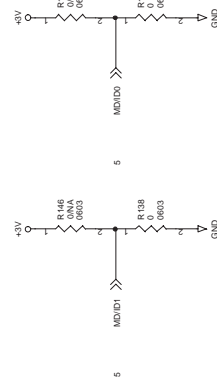


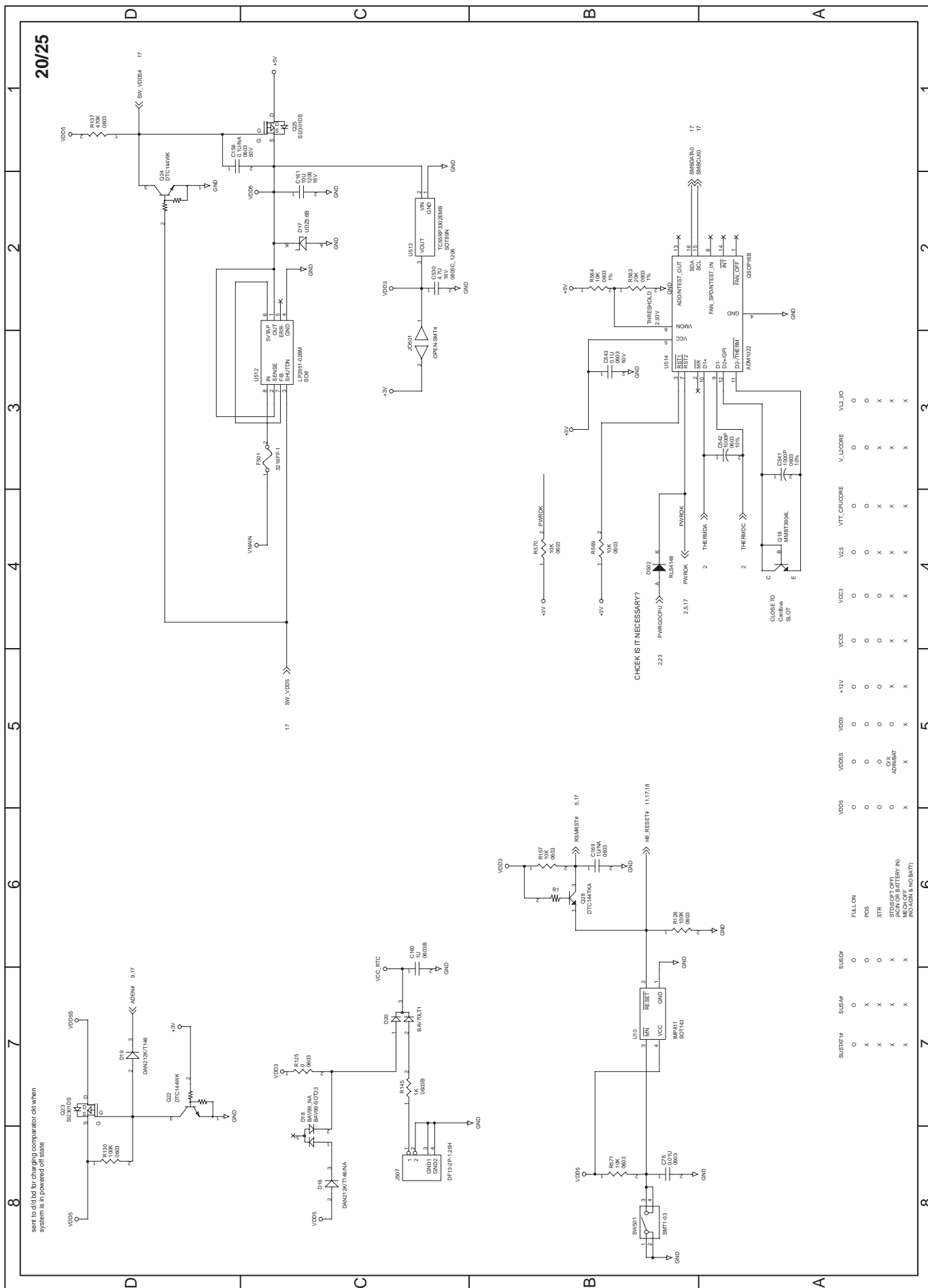
Change following values from PVT sample.  
R221 change from 39K-ohm to 20K-ohm.  
R211 change from 39K-ohm to 22K-ohm.



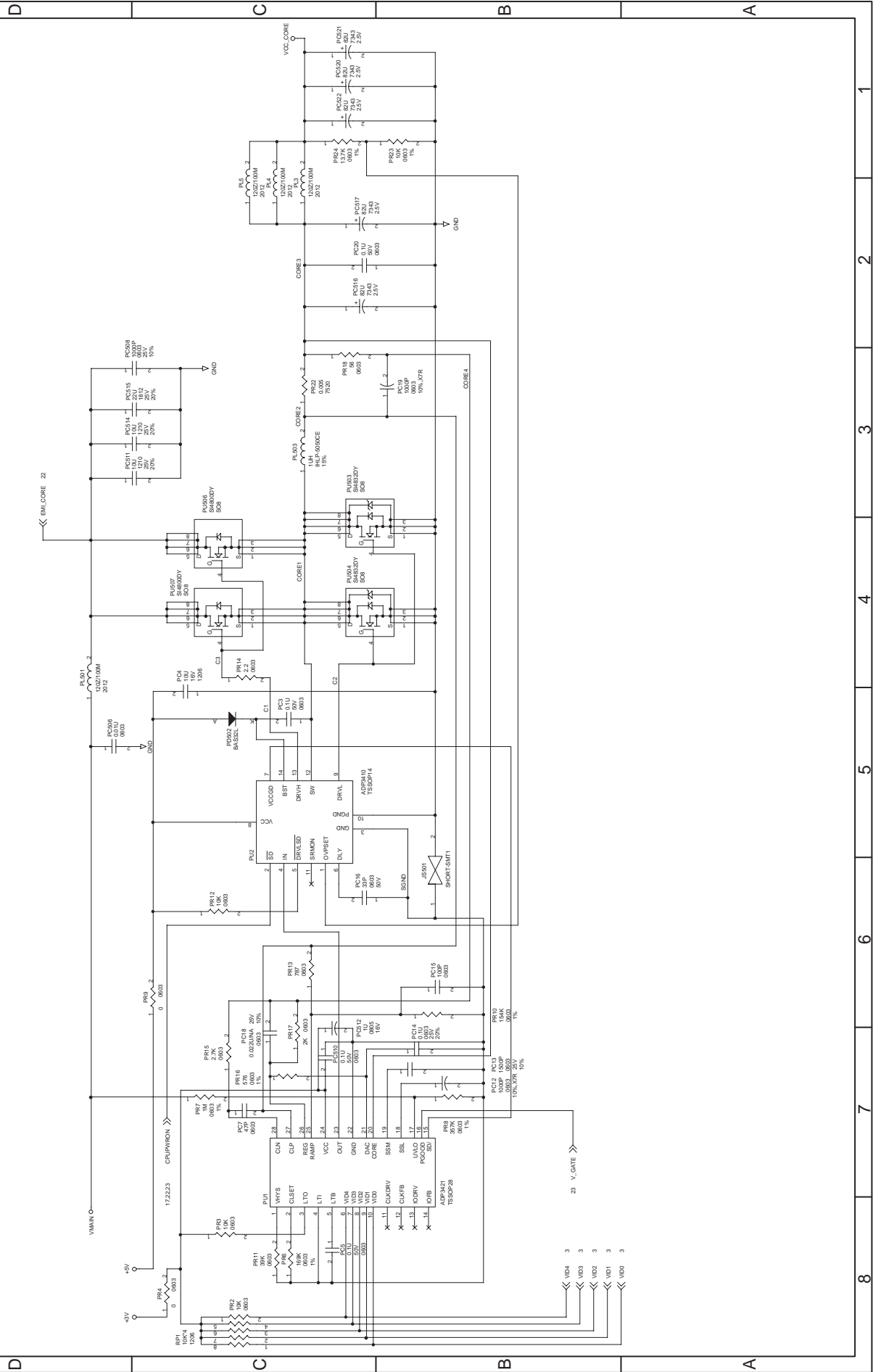


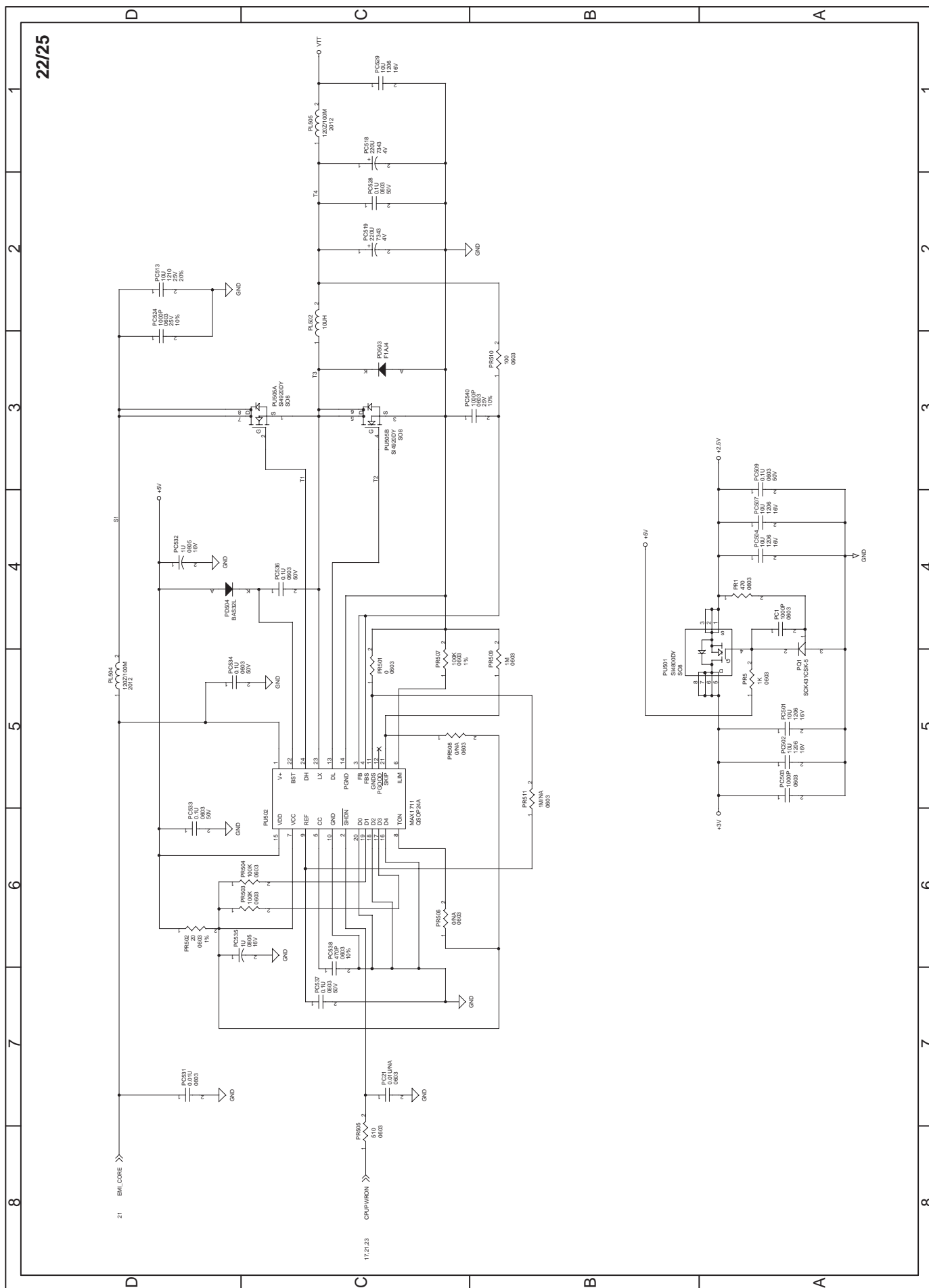
**GPIN PULL HIGH SIGNAL**





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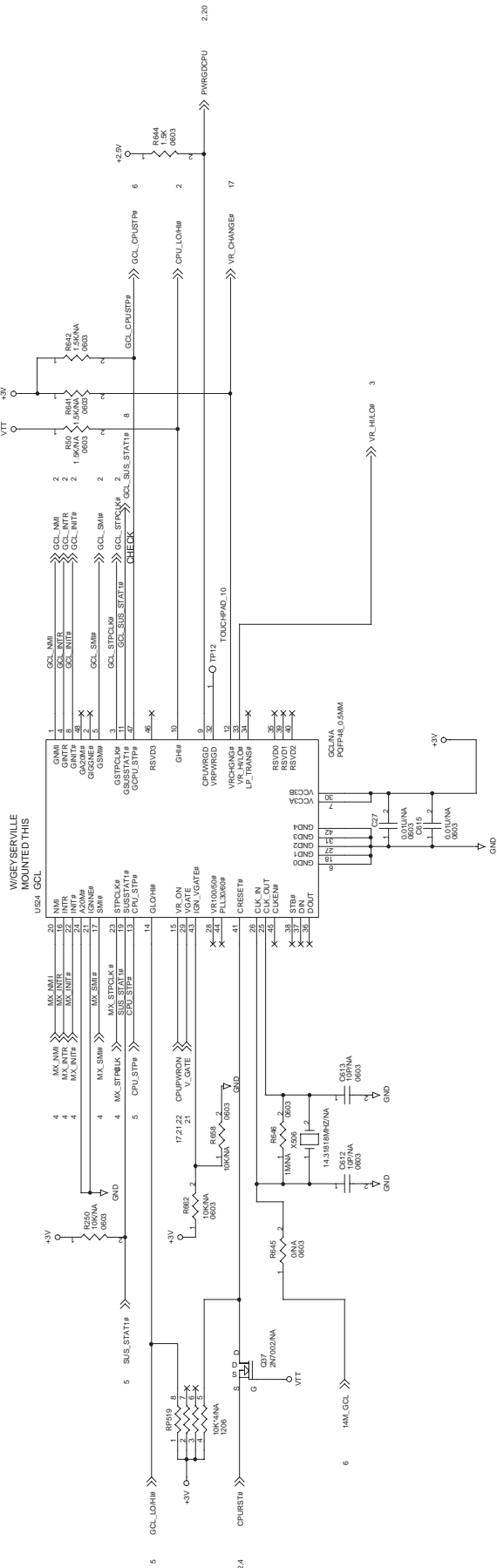
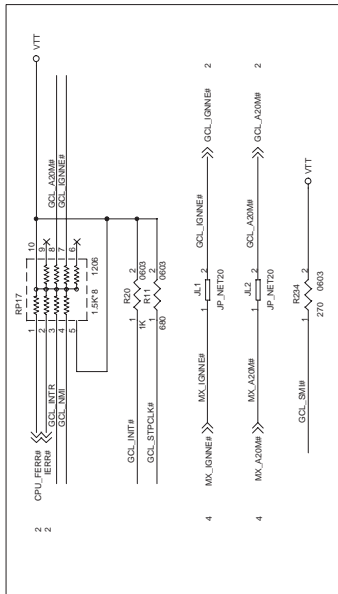
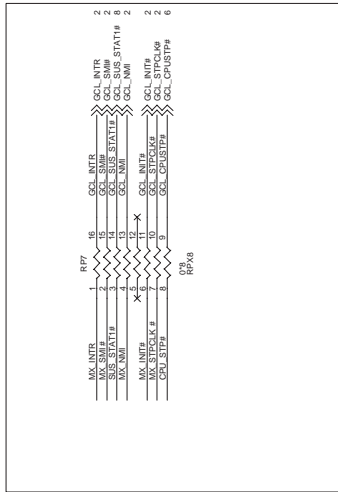
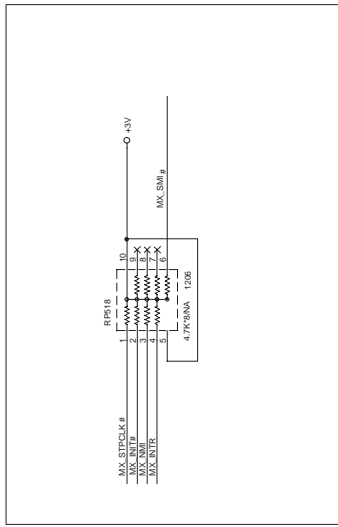


# GEYSERVILLE CONTROL LOGIC

W/GEYSERVILLE MOUNTED THIS RES ARRAY

W/O GEYSERVILLE MOUNTED THIS RES ARRAY

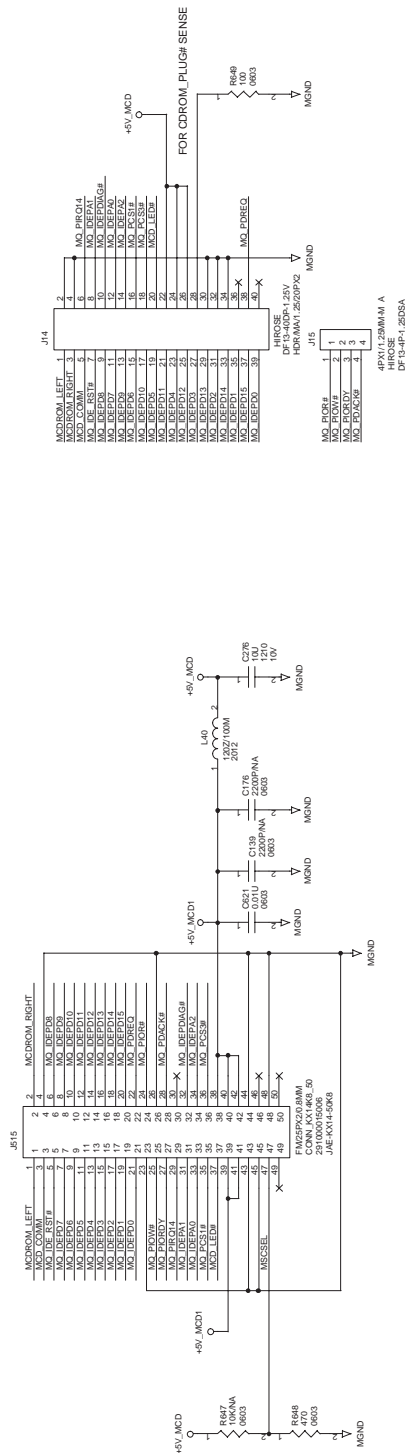
UNCONDITIONAL MOUNTED THIS RES ARRAY



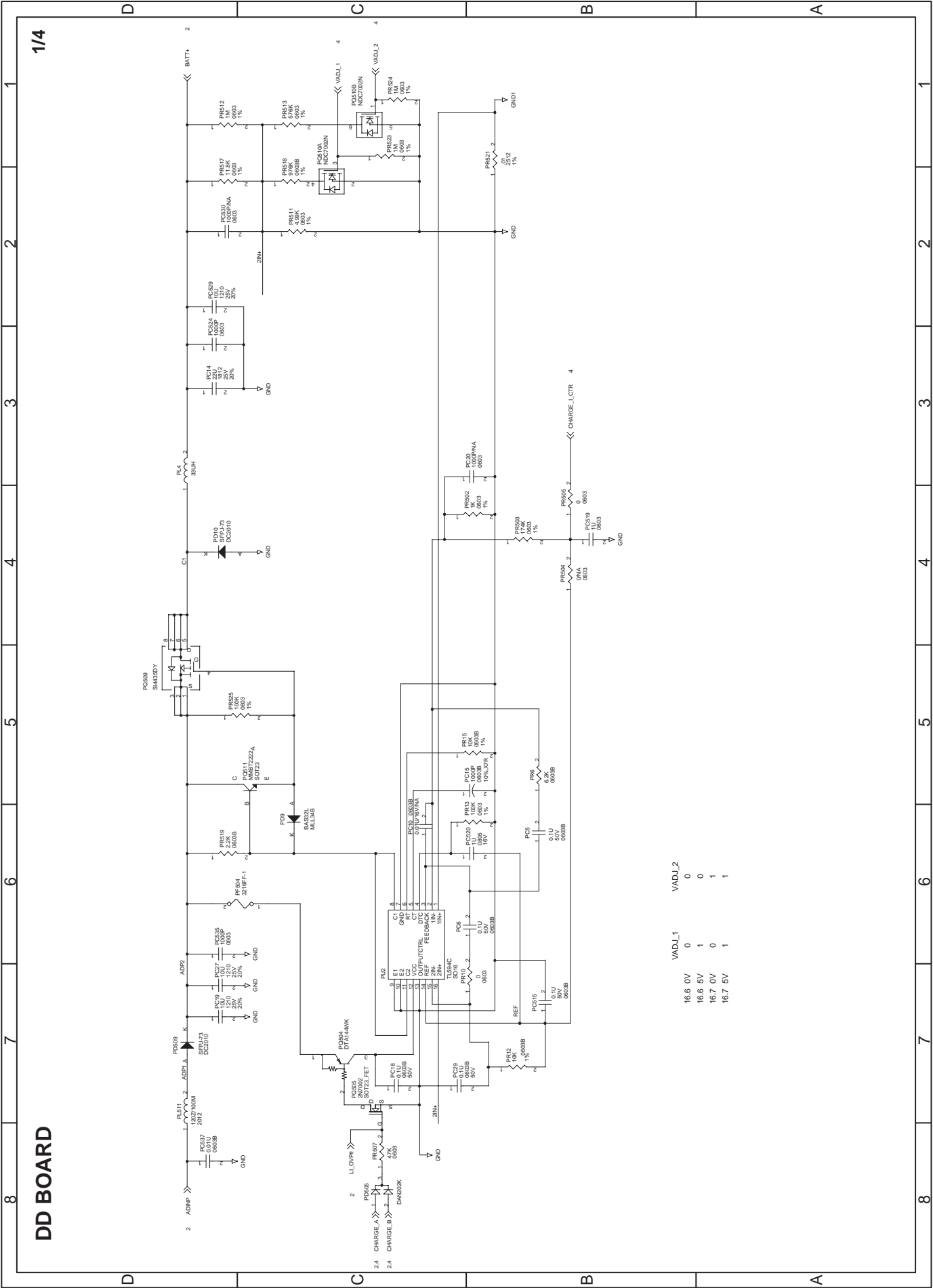


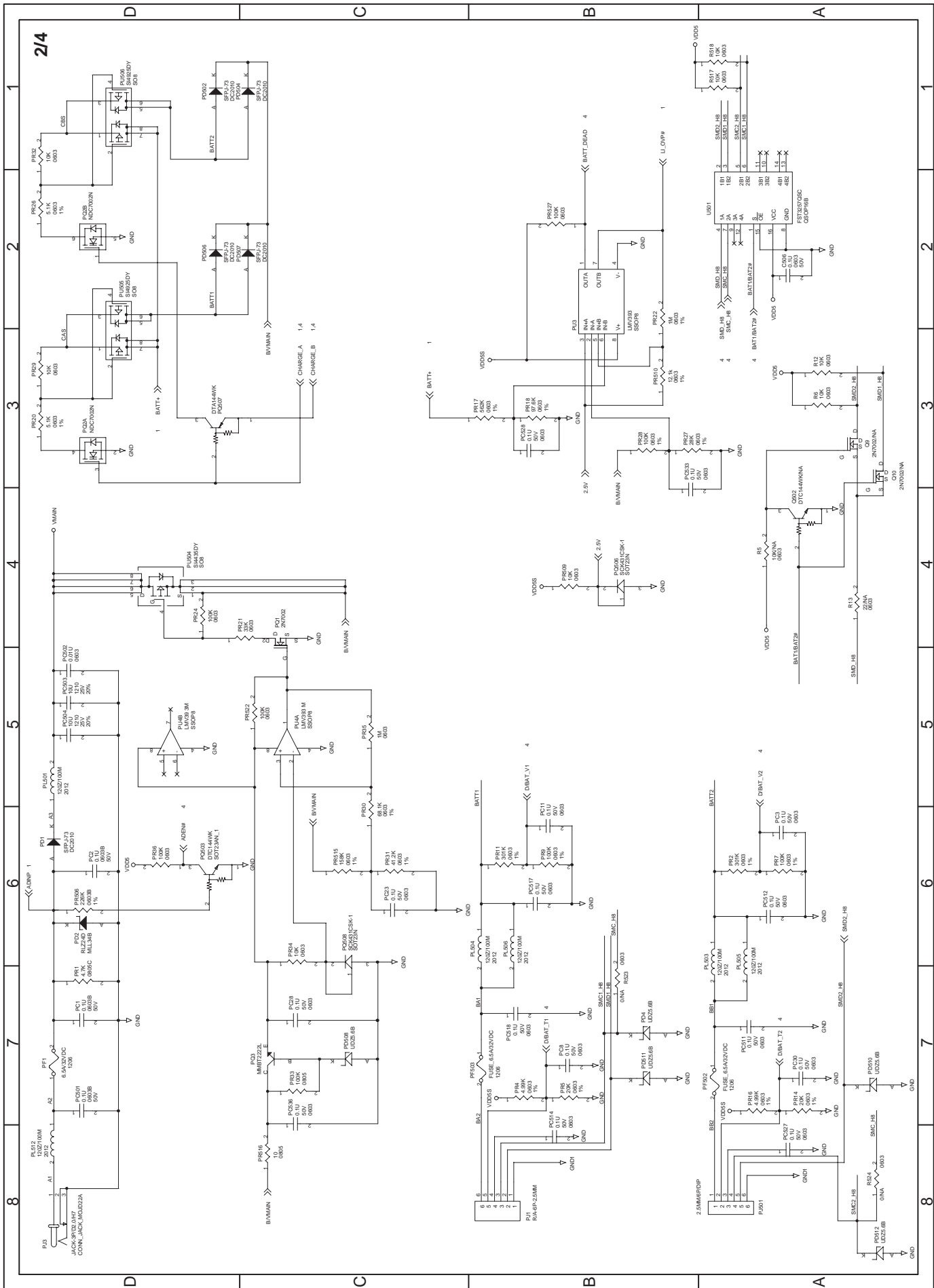
## HOPE CDROM MODULE TRANSITION BOARD

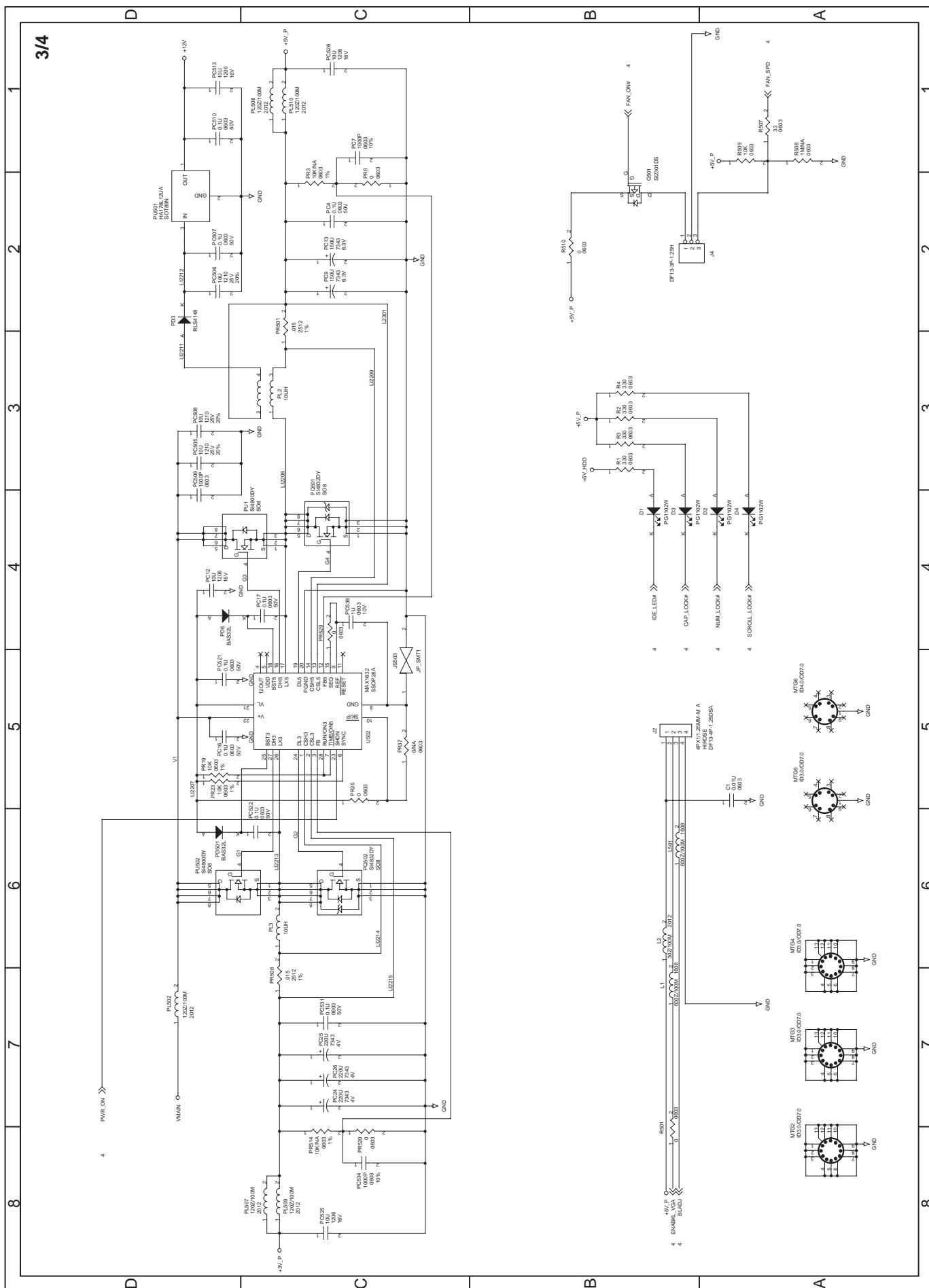
25/25

MTG21  
R00000000  
MTG10\_R0197

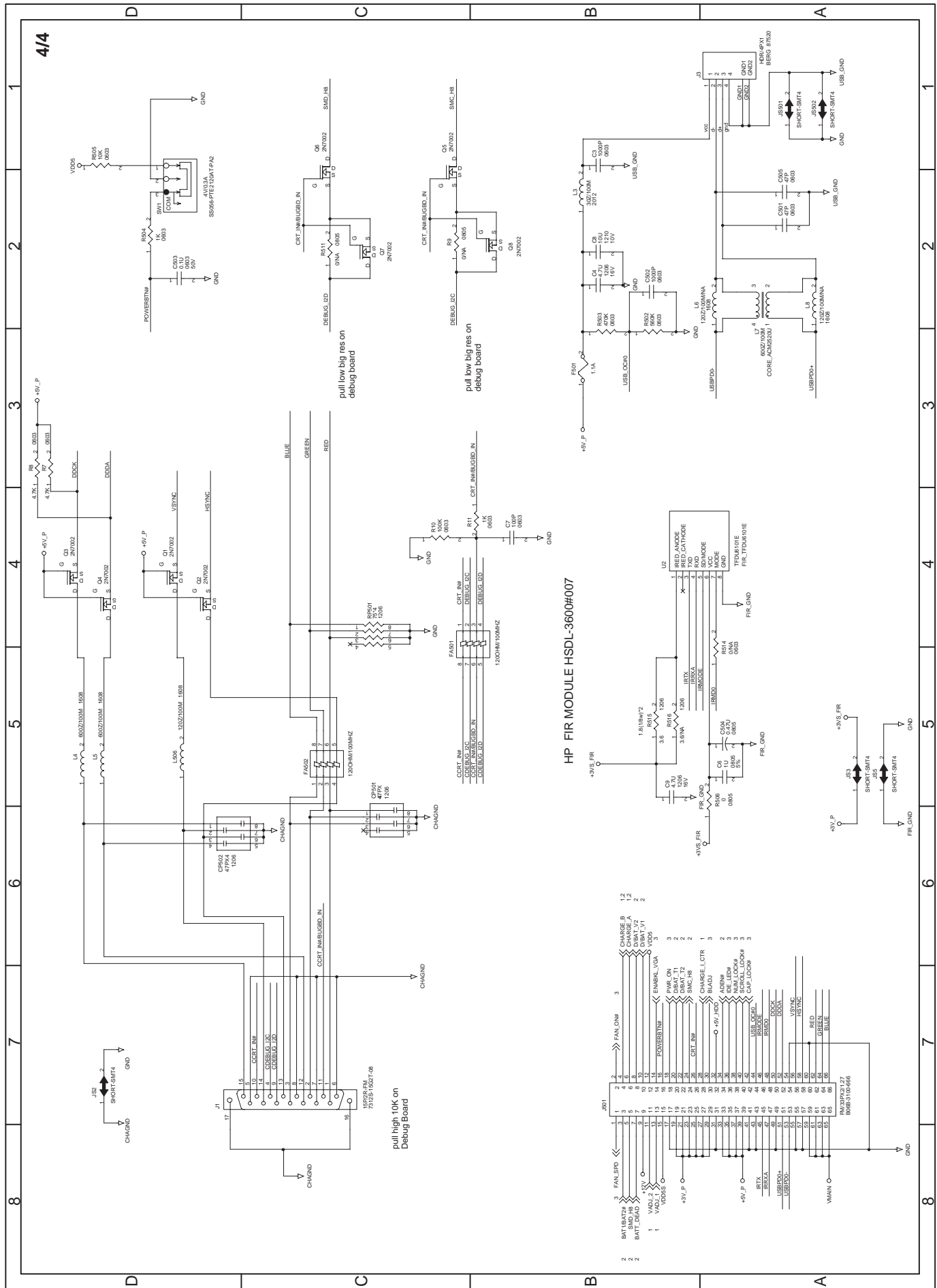
MEND



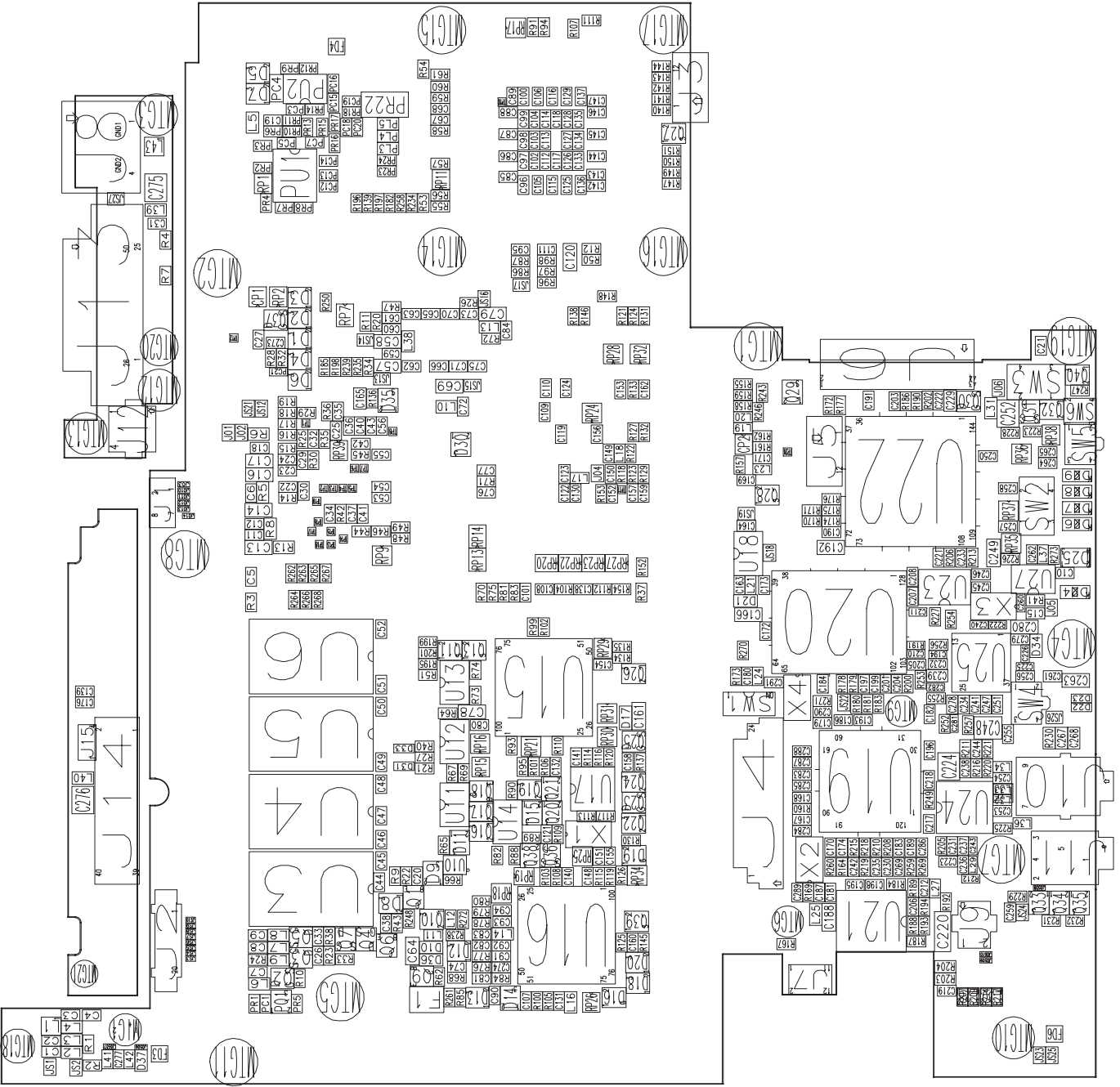


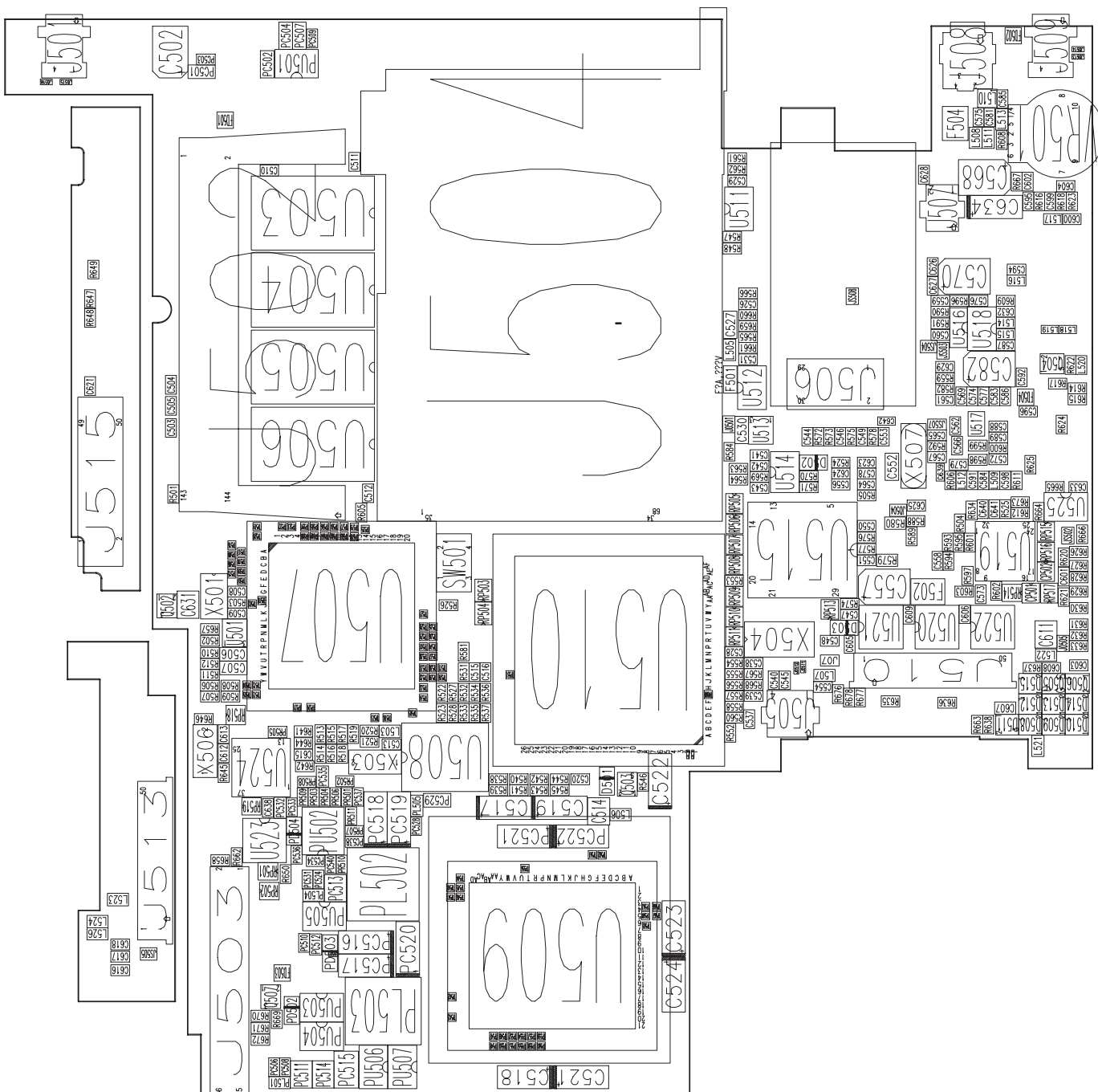


4/4

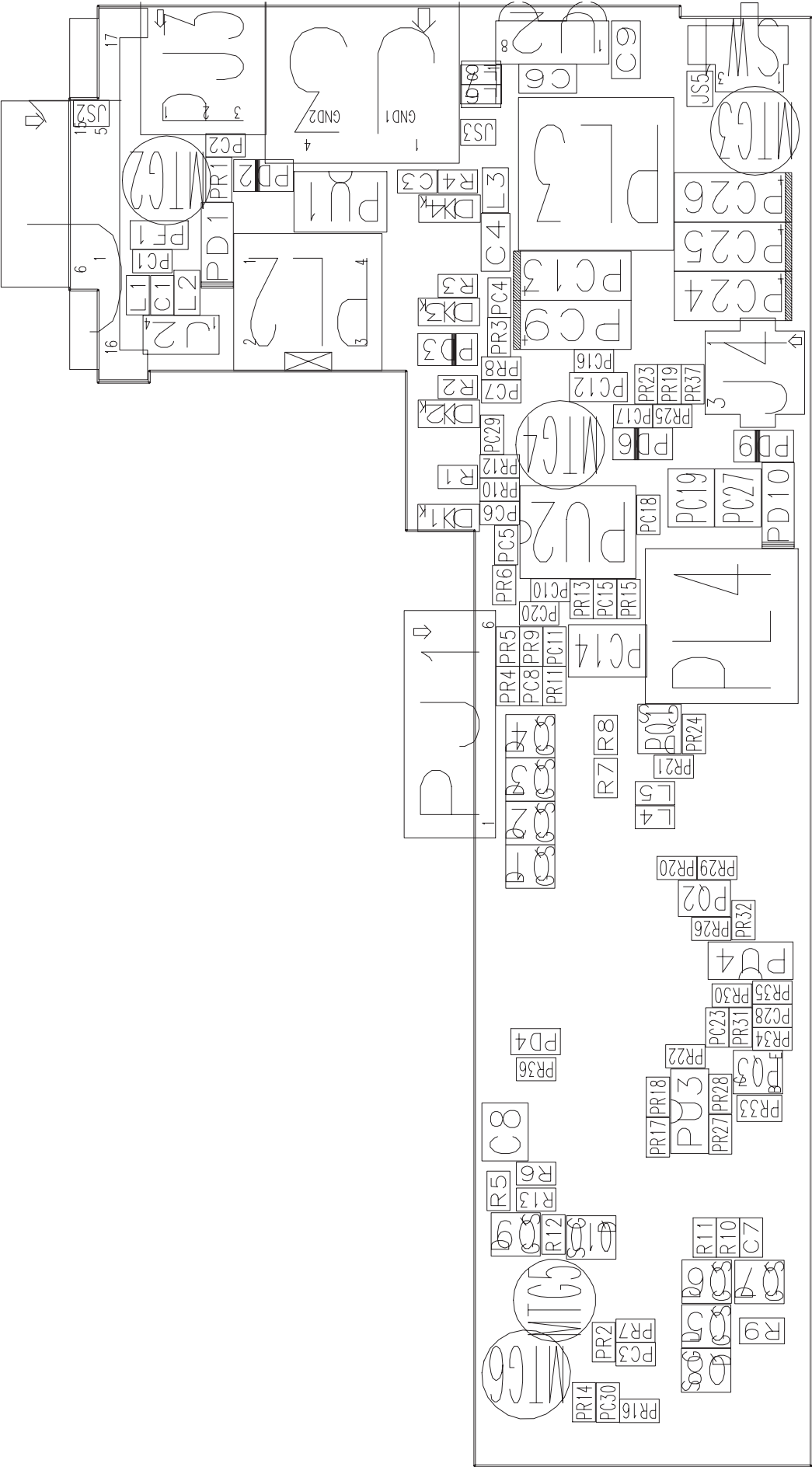


**PARTS LAYOUT**  
**(1) M/B**  
**COMPONENT SIDE**

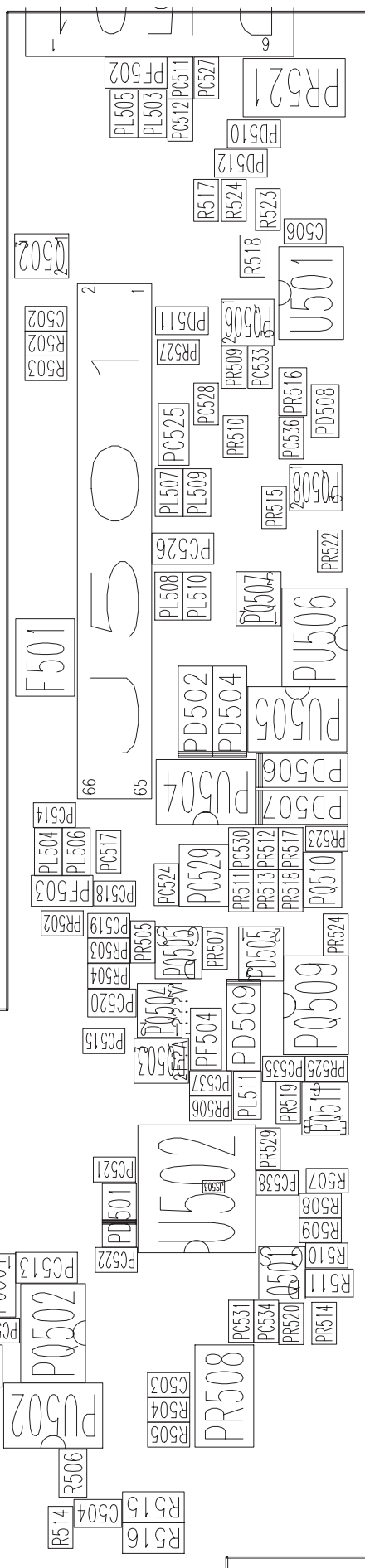




(3) DD  
COMPONENT SIDE



**(4) DD**



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**SHARP CORPORATION**  
**Digital Document Systems Group**  
**Quality & Reliability Control Center**  
**Yamatokoriyama, Nara 639-1186, Japan**

2001 February Printed in Japan ⓘ